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Journal of Electricity

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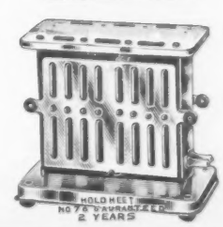

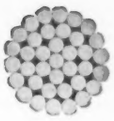

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Announcing a New Department

READERS of the Journal of Electricity will note the addition of a new department in this issue. Under the name of "The Coast Outlet." special attention will be given to the activities of the electrical contractor-dealers. The series of articles by Earl Browne, formerly published under the heading of "Electrical Construction," and which have been so favorably received, will be continued in this section. In addition, will appear the matter formerly published by the California Association of Electrical Contractors and Dealers in their publication "The Coast Outlet," which has been discontinued.

It is the purpose of the publishers to render to the contractor-dealers an even greater editorial service than in the past, to give them, through the medium of the printed page, the news of the industry, as well as the best constructive thought of the leaders of the profession. Thus, in the Journal of Electricity is embodied a journalistic service that is complete, carefully conceived and truly representative of all the co-ordinate divisions of the electrical industry of the West.

The importance of the contractor-dealer in the electrical scheme of things is without question. It is largely through him that the products of the central station, manufacturer, and jobber find their way into the home, to brighten the lives of the people, and to lighten the drudgery of housekeeping. There can be no question as to the inter-dependability of every element within the electrical industry. The success, or failure of one reacts immediately upon all the others. To help bring about a full realization of the truth of this statement is a definite function of our kind of journalism, and the publishers of the Journal of Electricity will work unceasingly to do its part in the accomplishment of this object.

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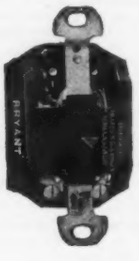

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The Limitations of Cooperation

MERCHANTS in every section of the West are being sold the idea of good lighting. So forcibly is its value being demonstrated before them by traveling exhibits, by lectures and by home grown samples of the art, that without any further solicitation whatsoever they walk out of the meeting and call on the nearest contractor for a bid to increase the wattage of their window displays.

ARCHITECTS are becoming sold on the electrical idea. The various cooperative leagues in this section of the country have studied the genus architect in all his aspects and are learning how to win his confidence. Even the shyest specimen will soon be so converted to the need for more electricity in the home that he will not only no longer shrink at the approach of the electrical contractor, but he will wish to keep one always with him for consultation when needed.

AS for the builder and contractor, that individual is competing to see who shall be known as building the most electric homes in town, while the owner—well, the owner has attended so many home electric exhibits and read so much effective literature on the use of electricity, that the only thing which keeps western communities from becoming all-electric cities is the fact that some pay envelopes reach only as far as a washing machine and do not yet include the possibility of an electric range.

EXAGGERATE? perhaps—and yet there is enough truth in it to illustrate the moral we are about to point. The electrical industry as a whole in the West has made great strides. To read of the programs outlined by the various cooperative movements is to be inspired with the confidence of certain growth. It is good work these men are doing—and the electrical business is bound to reflect the results of their enterprise.

LET no electrical contractor-dealer think that this is the whole of the story, however. A generous amount of fertilizer may increase the crop—but only for the man who plants his seed and diligently cares for his young plants. What difference does it make if there is a kindly feeling toward convenience outlets on the part of the architect, provided you are not the man who installs the outlets or sells the appliances which are to be attached to them later?

NO other man can make a success of your business. The most any cooperative movement can do is to help remove the friction which impedes your movement in the field—it still remains with you whether you or someone else shall be the one to make the progress on the smoother highway.

HERE lies the danger of cooperative movements—that the individual may forget that the point of importance is not whether architects as a class are open-minded, but whether he has established a working basis with the architects with whom he deals—not whether builders are putting in convenience outlets, but whether he is the man whose friendly advice and later services are sought by the builder in his home town.

COOPERATIVE campaigns and leagues are great things. But the question of who is going to handle the business, the department store, the hardware store or the electrical dealer, and the still more important question of whether that electrical dealer is to be you, depends solely upon individual initiative.

Central Station Policy in Matters of Legislation

THE extent to which a public utility is justified in encouraging or discouraging legislation which is favorable or unfavorable to its interests is a point which is still unsettled in the minds of many central station executives. In an address before the recent convention of the Northwest Electric Light and Power Association, George L. Meyers, newly elected president of that organization, ably expressed his views as to the policy which the industry should adopt in matters of legislation. Mr. Meyers said in part:

"The policy of the industry in matters of legislation, both affirmative and negative, should be an intelligent, fearless and candid one. The industry should avowedly sponsor legislation which it knows and feels will be of constructive benefit to the public and the industry alike.

"The fact that much legislation of constructive benefit has not been enacted is due to a timidity in undertaking it and when undertaken to a lack of adequate preparation in advance in first getting the public generally informed. Those of us who feel reluctant to seek constructive legislation because obsessed with the fear of public prejudice should get out from under such obsession. The public utility, like all business enterprise, is made up of individuals who give of their service or capital. They have a right to representation and hearing and to expect a square deal from government in like manner as do other citizens.

"Our industry, which we know to be conducted upon a high ethical plane, subject to the utmost public scrutiny and owned in large part by numerous men and women who have invested their savings and surplus capital with a faith in our ability and integrity to defend, promote and preserve the stability of their investment, is entitled to the same fair treatment and equal opportunity as labor, agriculture and other interests which do not hesitate to openly promote and defend themselves in an organized manner. No ambitious politician has a right to capitalize our industry by unjust and untruthful attack for political aggrandizement. Let us get that fact firmly in mind and then let us combat that kind of opposition with a relentlessness worthy of our intelligence and character. We should let no opportunity go by to refute what we know is not true. We should not permit ourselves to meekly submit to what we know to be unjust, even if it seems good policy to do it in order that there may be a semblance of peace, because there is no peace founded upon injustice. What we need is a spirit that is more aggressive and combative.

"We are convinced that no industry is rendering a more useful and essential service, is operating with a greater public accountability, is evidencing a finer sense of public obligation or is conducting its business with a greater honesty. What many of us need is a courage and a will to promote and defend our business which are as resolute as is our conviction. When the people understand, they will treat us fairly."

Mr. Meyers' attitude is an admirable one. The policy of secrecy which has been followed on many occasions in the past in combatting inimical legislation is one which should be discouraged. The electrical industry has nothing to be ashamed of. Let it fight its battles in the open.

Why Not Know the Operating Cost?

SEVERAL electrical men in conversation the other day made the following surprising statements: (a) cooking by electricity is just as cheap as by gas, (b) cooking by electricity is more expensive than by gas but more convenient, and (c) it varies. Why should the electrical industry know so little about the actual cost of operating electrical appliances? Surely it would be a simple matter to make laboratory experiments—or household demonstrations—and determine exactly what it costs to cook the same food by gas or by electricity—or what one can operate a toaster for to meet the needs of the average family.

Several lists of operating costs are available, most of which could be worked out by anyone with a knowledge of the multiplication table, the appliance rating and the local power rates. It is of little value to the housewife, however, to know that the waffle iron will cost so much per hour to operate. She does not run her waffle iron by the hour. It would be of interest for her to know that she could bake twelve waffles for 1c. worth of electricity, or whatever it may be. Here are some of the points on which the housewife would like authoritative information: How will an electric water heater compare with a gas heater in cost of operation, if I use the same amount of water? What is the comparison between gas and electricity for cooking? How much will a washing machine cost for the average washing for my sized family? How much will it add to my bill if I use an electric percolator every morning to make six cups of coffee?

And so on. Some time ago a committee was appointed by the California Electrical Cooperative Campaign to obtain just this type of information, but it has never brought in a report. The opportunity still remains for some one to render an invaluable service to the electrical industry by compiling authoritative tables of current consumption under ordinary household conditions which may be applied to local rates and used to convince the customer that the electrical industry is in some measure familiar with the characteristics of the appliance it sells.

Tax-Exempt Securities Are Source of Danger to Public Utilities

FOR the electric light and power industry, the new income tax figures tell a plain story with a plain lesson. In one year the number of Americans paying taxes on incomes of $100,000 decreased from 3,600 to 2,300. In every other tax paying class the number of incomes on which taxes were levied showed a similar decrease.

Every branch of government in the United States is practically inviting people to evade their taxes by seeking relief through investment in tax-

exempt securities. The governments, local, state and national, every day lay before the investor a great mass of their bonds with the statement: "If you hand over some of your money for these securities, we will see that you pay no taxes on the income you draw from the loan."

That many investors who are taxpayers do accept this offer and thus evade taxes is self evident. Meanwhile this tax burden is shifted to some other source and the electric light and power companies are forced to shoulder their share. Not only this, but these companies must work harder to secure the necessary capital for their construction programs.

In their customer ownership campaigns the utilities place their securities in the hands of the small investor, the man who will purchase five or ten shares of stock. The funds derived from such investors can not be counted upon to finance fully development and construction programs. The bulk of the funds must come from the large investor, yet he is the one who is turning to the tax-free securities.

On several occasions measures have come before Congress for preventing the further issuance of such securities. Another such measure will be acted upon at the next session. Here is an opportunity for the organized agencies of the light and power industry to participate in some constructive lobbying.

Freight Elevators and Window Displays

SAID the electrical dealer to his friend, as he walked him past his place of business, "What did you notice most in that window display?" "As a matter of fact," replied his friend, "I didn't notice. I sort of had one eye out for that open freight elevator and I forgot to look." How many people who pass your store are concerned with some obstruction on the sidewalk and miss entirely the thought and effort you have put into your windows? It is a well established fact that people will cross the street rather than go by a construction job, even where a special covered way is provided. A walk about town will bring out the surprising fact that there are many merchants who create construction job conditions before their own establishments without any further necessity than the thoughtless failure to remove barrels—or, for instance, to keep the freight elevator closed. It is an easy way to discourage business.

Public Relations on Paper

THE most important committee of most electrical associations is the one devoted to the problem of public relations. This committee makes a beautiful report yearly—its members make reports in between times, some of which are addressed to local electrical groups and contain much sound wisdom, some of which are published. There is, in fact, no one subject upon which the electrical industry thinks so soundly as it does on the matter of public relations.

But does it relate to the public? Are not most of its efforts devoted to telling the story of the importance of public relations to itself, after which, on the principle of the man who has tried to get a telephone number and failed, it gains the impression that it has really accomplished something? How many of the power companies have a consistent method of telling their story to their consumers? Between aberrations of the legislature when there is no immediate dangerous legislation to be fought, how many of them think about lectures and literature and demonstrations? One power company official commented upon the fact that at a recent opening of a power plant in this territory, an occasion at which there were hundreds of people in attendance who had come to witness the spectacle at considerable inconvenience to themselves, there was not one so-called public relations specialist present. The power company in question, of course, was represented by its general manager—but no one of the higher officials of other companies in that territory attended.

Marriage, or any other human relationship, is dependent for success upon more or less continuous attention. A really friendly feeling on the part of the public is not to be brought about by a fusillade of campaign literature on the occasion of an emergency but must be based upon the feeling of confidence which comes from actual day by day friendly contact. The public relations specialist is not the man who can make a good speech on the subject—but the man who actually succeeds in making the contact with the consumer.

The Explanation of a Mystery

ONE of the unexplained mysteries of the ages is the phenomenon of the contractor who will submit a bid and execute the work at a figure less than his own cost. Why anyone should work for nothing and even on occasion make an additional present to the owner in actual cash value is difficult to explain. And yet any contractor who has studied costs carefully can tell you of jobs he has lost because the other man was willing to do the work at a price which his figures show must mean a loss. It is not a case of sour grapes—the man who got the work did run behind and in all probability a little later he retired from the contracting business at the request of his creditors.

Some of the mystery is explained by F. V. Mitchell in his article on the relation of overhead to material and labor costs which appears in this issue. The point is that the man who does work for less than it costs him is the man who does not know in the first place what it costs him. He knows what his material amounts to and what he pays his workmen, but he hasn't any conception of how to figure his overhead—or if he adds it at all, may be applying the percentage to the wrong figure. The moral is: If ever you begin to wonder why you didn't make as much money as you expected to on that last job or why, with plenty of work in the shop to do, you seem each month to be a little bit behind where you were the month before—why, look to your overhead, man, look to your overhead.

CURRENT COMMENT

Sacramento Far From Municipal Power System

Sacramento is far from a municipal power system. As pointed out in a previous issue of the Journal of Electricity (July 15, 1923, p. 64), this California city has taken advantage of the municipal utility district act and plans to embark upon a development scheme which will bring "cheap" hydroelectric power into the city and will attract "hundreds" of new industries. In the meantime there have been some interesting developments which throw a new light on the city's plans.

In the first place, the Federal Power Commission has denied the city's application for a preliminary permit to the water rights on Silver Creek until a series of hearings have been held. The Commission has taken this action in view of a license which has already been issued to the Western States Gas & Electric Company for a project on the South Fork of the American River. Until the city modifies its plans or reaches an agreement with the utility holding a prior right, no permit will be issued, the Commission states. The hearings on the matter will be held in San Francisco before F. E. Bonner, the Commission's district engineer.

However this is but a minor detail. Only preliminary steps with relation to the project can be undertaken until the people of the municipal utility district vote sufficient money to finance the development. It is estimated that $8,000,000 will be sufficient for the initial project, $4,000,000 of which will be used for purchasing the distribution systems of the utilities now serving the city and the remainder spent on construction plants, dams and reservoirs. It is hoped that sufficient data will be on hand to submit the bond issue to the people at the time of the general election in November. Presaging the action of the public when the question of voting public funds is at stake is a risky proposition. In the election which resulted in the formation of the district but one-fifth of the registered voters participated. While the majority was apparently overwhelmingly in favor of the formation of the district, who can say what action will be taken when bonds are to be voted? It might rightfully be said that only the proponents of the project participated in the recent election, those opposing it feeling safe in the knowledge that nothing could be done without passing the bonds.

In the meantime the directors of the district have asked the State Railroad Commission and the utilities for valuation figures for the distribution systems inside the district, at the same time threatening condemnation suits should the utilities fail to comply with their wishes. But despite all of these developments the joker is still in the deck and the joker in this case is the sanction of the people on the expenditure of public funds.

California's Overhead Line Inspection

California has the distinction of being the first state in the Union to undertake a detailed inspection of all overhead electric utility facilities, with the view to eliminating improper and hazardous construction, as a matter of protection to the public, to the utility workers, and for the maintenance of safe and efficient service. This immense task was delegated to the Railroad Commission by the California Legislature, through the enactment of Chapter 499, Statutes of 1911, as amended by Chapter 600, Statutes of 1915, which charged the Commission with the inspection of all overhead electric facilities as to their compliance with the provisions of the law, providing for safe and efficient construction.

The work has been under way for approximately one year, in which time the state from Secramento south has practically been covered. This area includes the facilities of more than fifty electric utilities, more than 500 cities, and a large number of industrial services. Upwards of 75,000 miles have been covered by the inspectors of the Commission in the pursuit of the work. Completion of the preliminary inspection, and the final inspection itself will require two years additional, it is estimated.

The Commission has felt that the greatest hazard to workmen and the public existed in the facilities of the power and traction utilities, and with this in mind, inspection has been made of these properties before any attempt to look into the facilities of the telegraph-telephone and other signal companies. Excepting in the case, therefore, where in making inspection of supply lines a particular hazard is discerned in the signal lines, such as their location of proximity to the supply line, the inspection of signal facilities will not be made, until the completion of the inspection of the power facilities.

From data gathered in the field the Commission is enabled to make an accurate estimate of the cost and time necessary to make the correction in existing construction, and this information is incorporated in the decision which the Commission hands the utilities after the completion of the preliminary inspection. It is contemplated to make a final inspection of

the facilities at the expiration of the time allowed in the decision.

While on the work of inspection it is also the business of the inspectors to acquaint the field men of the utilities with the interpretations of the Commission of its General Order No. 64, which became effective July 1, 1922, and which is a more detailed ruling on the construction of overhead lines. This, together with the safety to workmen and the general public, as well as the improved service assured by a better mode of construction of lines, makes the inspection now being carried on of utmost importance to everyone in the state, and is being received as such by everyone connected with the electrical industry.

Hoover Speaks on Trade Associations

Declaring that the trade association as a facility for the promotion and self-regulation of industry and commerce has become, by reason of its scope and activity, an important American business institution, with which the public, generally speaking, is little acquainted, Herbert Hoover, Secretary of Commerce, in the introduction to that Department's new book entitled "Trade Association Activities" released recently, expressed the opinion that the constructuve purposes of these organizations have unfortunately been confused with the minority of activities which have been used as a cloak for action against public interest.

"Just as a business house or an individual meets its obligations and carries on its daily relations within the community, so the trade association has a real individuality in the business fabric," according to Secretary Hoover. "All trade association activities are not good, just as all individual habits are not good until so proved by their reactions on the individual and the community," the Secretary says, adding that "perhaps the best way to guide activities into the most constructive and profitable channels is through thoroughgoing analysis and examination of those activities which seem on the surface to be constructive in their application and results."

On the subject of statistics, Secretary Hoover says, in part: "There is no question but that the curves in the business cycle from activity to depression have been less disastrous in those industries or trades where accurate, lawful statistical data have been available to all. Fundamentally it is impossible for business men to form those vital judgments as to their future course of action in the wise and safe direction of their activities unless they are informed as to the changing currents of production and consumption, not only in their own lines but also in other lines of business, which indicate broader currents of economic life. The only criteria are statistics and if industry is to march with reasonable profits instead of undergoing fits of famine and feast, if employment is to be held constant and not subjected to vast waves of hardship, there must be adequate statistical service. Whether these services are to be maintained by the Government or by trade associations, they must be maintained if we are to have an orderly economic life."

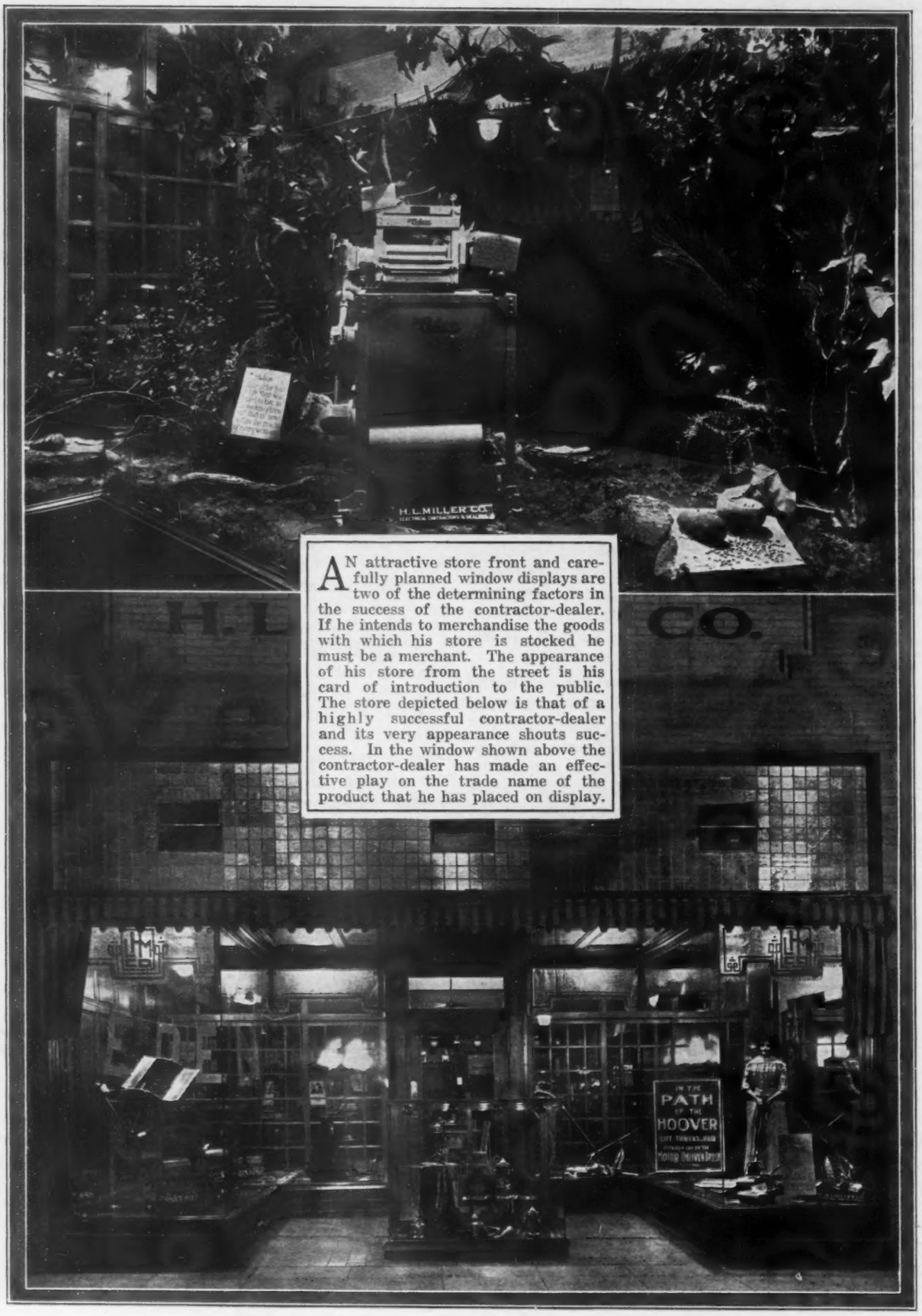
Discussing legislative activities, Mr. Hoover asserts that "The interests of any one industry or trade, to be sound in the ultimate analysis, must be the public interest and in their legislative activities many trade associations have borne this axiom foremost. The demand of legislatures for the views of the different trades upon all sorts of questions of public interest is incessant, and the open preparation and presentation of such matters is far more consonant with proper development of public life than the private lobbying of the few or powerful.

"Waste elimination, in a vast area of problems, can only be accomplished by collective action in a trade. Hundreds of millions of dollars have been saved through the adoption of principles laid down in such programs, not alone to the business groups concerned but to the ultimate consumer. They have brought about lower prices, through attacking directly the costs of raw material, inefficient plant operation, and unnecessary stock maintenance."

With reference to cost accounting activities, Secretary Hoover pointed to the "truly remarkable findings of Government agencies in the war years regarding the knowledge and understanding of costs in production and distribution. Losses often were confused with profits, those investigations showed, all for the lack of knowledge of the fundamentals of cost accounting. Today, the trade association is proving itself the most potent organized influence in the study of costs in industry and trade, aiming towards standard systems applicable to peculiar conditions. All of which tend to more scientific knowledge of business and ultimately lowered costs."

On the subject of employee relations, the Secretary indicates, that while at earlier periods the individual business concern or manager, perhaps, has taken more frequently the initiative in forward policies of such relations, trade association after trade association is now developing the necessary preliminary stages of more equitable and advanced phases of this subject. In most cases it is largely a matter of research into the tremendous problems involved—selection of personnel, education, welfare work, accident prevention, employment principles, and collective agreements. In the opinion of Mr. Hoover, the association will recognize that in the years of devotion to improving the processes of production and distribution there has been great oversight of the human factor and its mass relation. "Shall it be approached blindly and without preparation and knowledge?" the Secretary asks, answering, "Not if the present-day indications of trade association activity have real meaning."

Credit and collection activities, trade disputes and ethics, insurance, public relations, traffic and transportation, commercial research, industrial research and government relations are among the other subjects discussed by Secretary Hoover in the introduction to the book.



AN attractive store front and carefully planned window displays are two of the determining factors in the success of the contractor-dealer. If he intends to merchandise the goods with which his store is stocked he must be a merchant. The appearance of his store from the street is his card of introduction to the public. The store depicted below is that of a highly successful contractor-dealer and its very appearance shouts success. In the window shown above the contractor-dealer has made an effective play on the trade name of the product that he has placed on display.

By Arthur L. Spring
Merchandising Specialist,
General Electric Company, Los Angeles

No electrical dealer is so perfect but that he can learn something from the manner in which the other fellow conducts his business. In this article Mr. Spring outlines some of the successful merchandising principles which have been practiced by electrical dealers up and down the Coast.

THIS is an age of intensive merchandising. Competition in every line is exceptionally keen and it is vitally necessary for the electrical dealer to pay ever increasing attention to merchandising. The dealer who opens a store and expects sufficient business to come to him cannot succeed in this day. He must, through various forms of advertising and through solicitors, actively go out after the business. His merchandising must be constructive and creative. There are numerous ways of building up electrical retail business and many of the best ideas of merchandising can be obtained from other lines of business than our own. Successful merchandising schemes followed by department stores, drug stores, hardware stores, etc., may often be applied with equal success in the merchandising of electrical appliances.

Other merchants spend large sums to make their store fronts attractive. There is no reason why the fronts of electrical stores should not be made as attractive as the best. The store front and the show windows give the passing public either a favorable or an unfavorable impression. The more attractive they are the more favorable the impression, and consequently the larger the volume of business for the merchant. The accompanying photograph shows an attractive front of an electrical store. The investment in this store front has proven to be a profitable one.

There should be an electric sign on the front of every electrical store and the show windows should be excellent examples of proper show window lighting. The illumination of the store should also be an example of the best in store lighting. The dealer must practise what he preaches. The contractor-dealer, who has installed and used effectively proper show window lighting with various color screens, demonstrates to the other merchants through his windows the value of an up-to-date show window installation. When he interests a merchant in show window lighting he has an excellent opportunity to close his prospect by an effective demonstration with his own show window. The best show window installation can often be fully paid for in a few months from the profits in the additional business it will secure for the contractor-dealer who is alive to this opportunity.

There is no phase of the electrical business that is improving more rapidly than show window lighting. The development in this line is remarkable. A few years ago we hesitated in recommending for show windows a foot-candle intensity of ten or twelve, while now we confidently advise 40 to 100 foot-candles, and there are now installations giving as high as 2,000 foot-candles and obtaining extraordinary results. The possibilities in show window lighting business are great and the proper installation by a contractor-dealer is both a valuable means of securing this business and splendid merchandising in effectively showing the goods he sells. The im-

portance of good window displays is evidenced by the fact that some of the largest department stores spend over half a million dollars annually on their show windows. A study shows that half of the rent the average merchant pays is for his show windows.

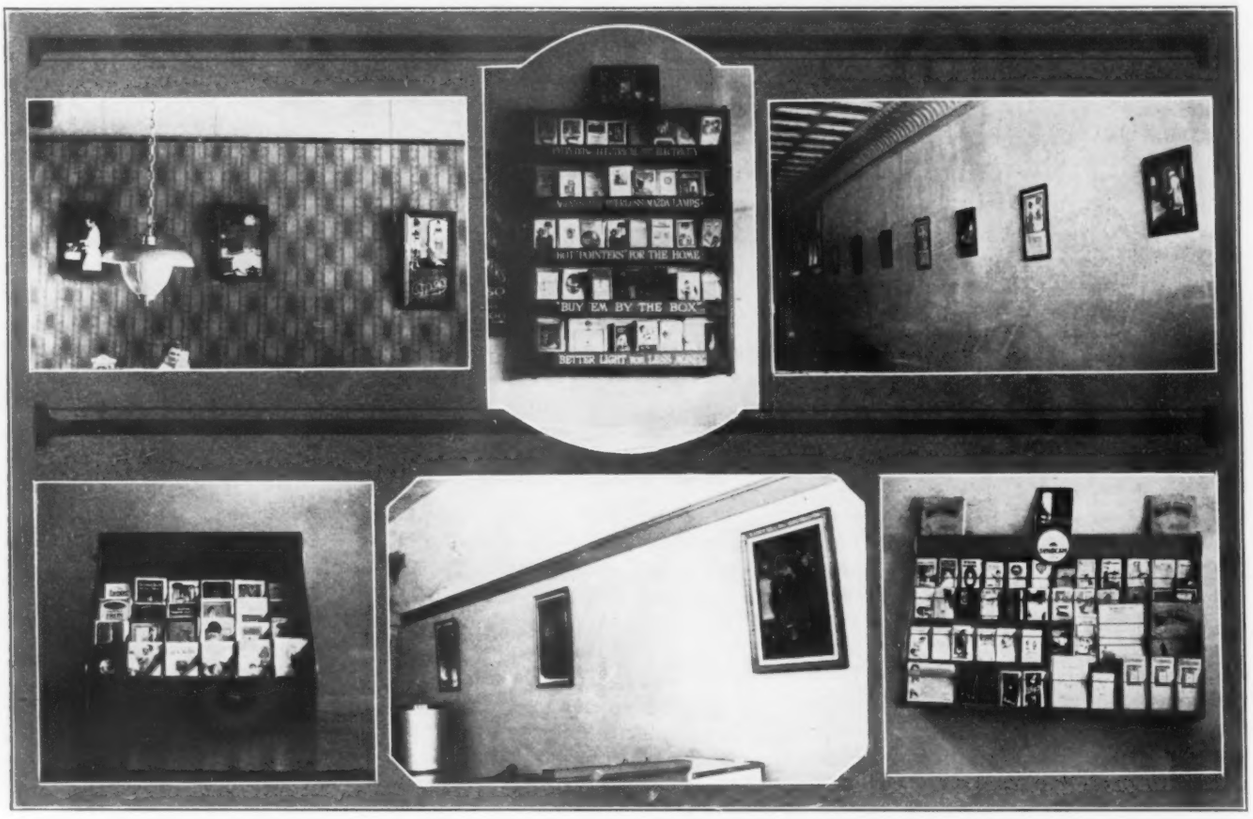
The proper illumination of the contractor-dealer's store likewise will materially assist him in building up his store lighting business, and at the same time be of much direct value to him by building up his retail business.

The general appearance of any store has much to do with its success. Electrical appliances make attractive displays and the wise electrical merchant is the one who makes his entire store a display. The displays of larger appliances and the table displays of smaller appliances within the store should be changed occasionally for best results. On one side of the store where large appliances are displayed the floor of the show window should be the same level as the floor of the store, and there should be no division between the show window and the store. This helps to make the entire store a display and offers the best condition for window demonstrations of appliances. And these demonstrations in the dealer's show windows offer an excellent means of increasing the retail business.

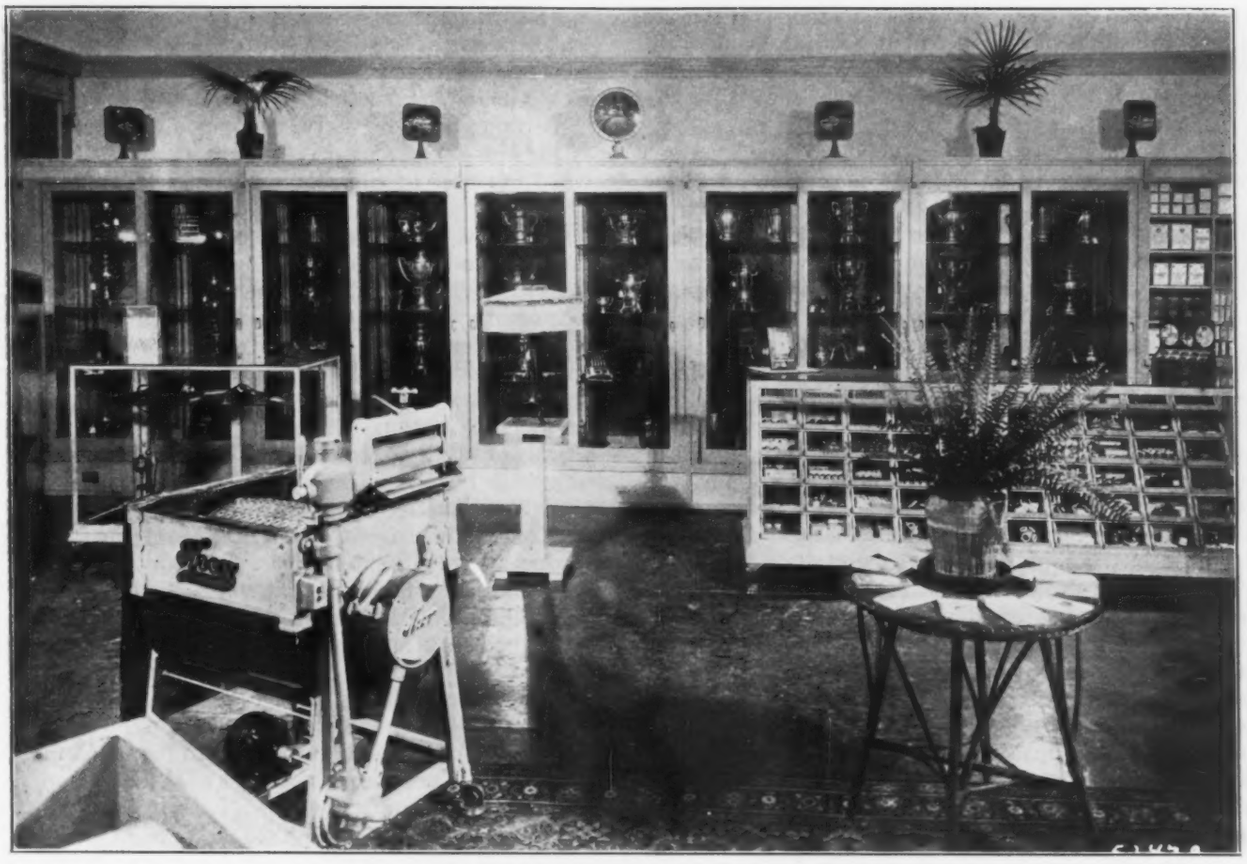
The appearance of the persons waiting on the customers is very important. There is no doubt that many women avoid buying in electrical stores, whenever they can purchase elsewhere, due to the fact that they have in some electrical stores been waited on by men in mechanic's clothes or with their coats and collars off and their shirt sleeves rolled up, while in other stores their requirements are cared for by persons in the neatest of dress. This makes a great deal of difference to women and as a large percentage of business in electrical stores is done with them, this point must be given more serious consideration in the future than it has in the past.

One of the best means by which the electrical merchant may increase his business is in the effective use of manufacturers' advertising literature. Many attractive booklets, folders and envelope stuffers are furnished the electrical dealer with his imprint and without charge. If properly used these offer an exceptionally good means of advertising at the lowest possible cost.

Every electrical store should have one or more advertising or publication display racks which hold neatly an assortment of advertising literature descriptive of the lines he handles. These racks should be placed in a conspicuous location in the store, especially convenient for their frequent use. Several such racks are shown in accompanying photographs. One is a rack which any dealer can make or have made to suit his requirements, and the other one can be purchased for about one-half its actual cost from one of the manufacturers. Customers should be encouraged to take the publications which interest them, and every clerk should be instructed to give all interested prospects a folder or two descriptive of the appliance in which they are interested.



The proper utilization of manufacturers' literature is an important factor in good merchandising. The above views show display racks for booklets and stuffers and the manner in which a store interior is beautified by framing and properly hanging some of the literature.



Note the effective manner in which appliances are displayed in the cases along the wall of this store. Also note the notion case which holds many of the smaller devices for which there is a constant demand and which are difficult to display.

An assortment of several folders should be wrapped in every package handed over the counter or delivered to the customer. The easiest way to do this is to select three or four folders most suitable, unfold one and fold it over the others. This makes a unit of all of them so that when placed conveniently under the wrapping counter they can with utmost ease be placed in each package. The easier this is made the more booklets will be distributed and the more business result. This distribution of folders is effective because the customer who has bought the appliance with which the literature was wrapped is psychologically in a mood to be interested in things electrical. She has just given consideration to electrical appliances, and the appliance just purchased will give such good service that she will as a result be interested in other appliances and probably purchase from the dealer whose imprint is on the literature she receives with the package.

There are, of course, many other ways in which these folders can be used to advantage. No letter, invoice or statement should ever go out from an electrical store without a stuffer enclosed with it. At exhibits and shows this literature can also be used with good effect.

Electrical manufacturers furnish the dealers with many attractive advertising cards of different sizes illustrating the various appliances. These can be used to advantage in show windows, stores, exhibits, etc. One of the most effective uses of these is shown in an accompanying photograph. Many dealers' stores have barren walls which give the store the appearance of a barn. These walls can not only be made attractive, but as well, be made an effective advertising medium by neatly framing choice manufacturers' cards and hanging them like pictures on the wall, as this dealer has done. Another photograph shows how a dealer has framed and hung as pictures some striking calendars furnished by an electrical manufacturer. These materially improve the appearance of the store and effectively advertise a product the dealer sells.

Many times far too little care is taken by the electrical dealer in the selection of his wall cases and show cases. This equipment should not only be attractive, for it has a great bearing on the general appearance of the store, but the wall cases and show cases should be as efficient silent salesmen as it is possible to make them. The accompanying photograph shows some exceptionally attractive wall cases equipped with plate glass shelves and a dark green plush background. The appliances are certainly shown to best advantage in them.

A great many electrical dealers have for some time been at a loss to know how to best stock and display the numerous small electrical devices for which there is a regular demand and which make a rather untidy appearance on the shelves. In some cases they have been placed behind wood panel doors, at other times special drawers or boxes have been

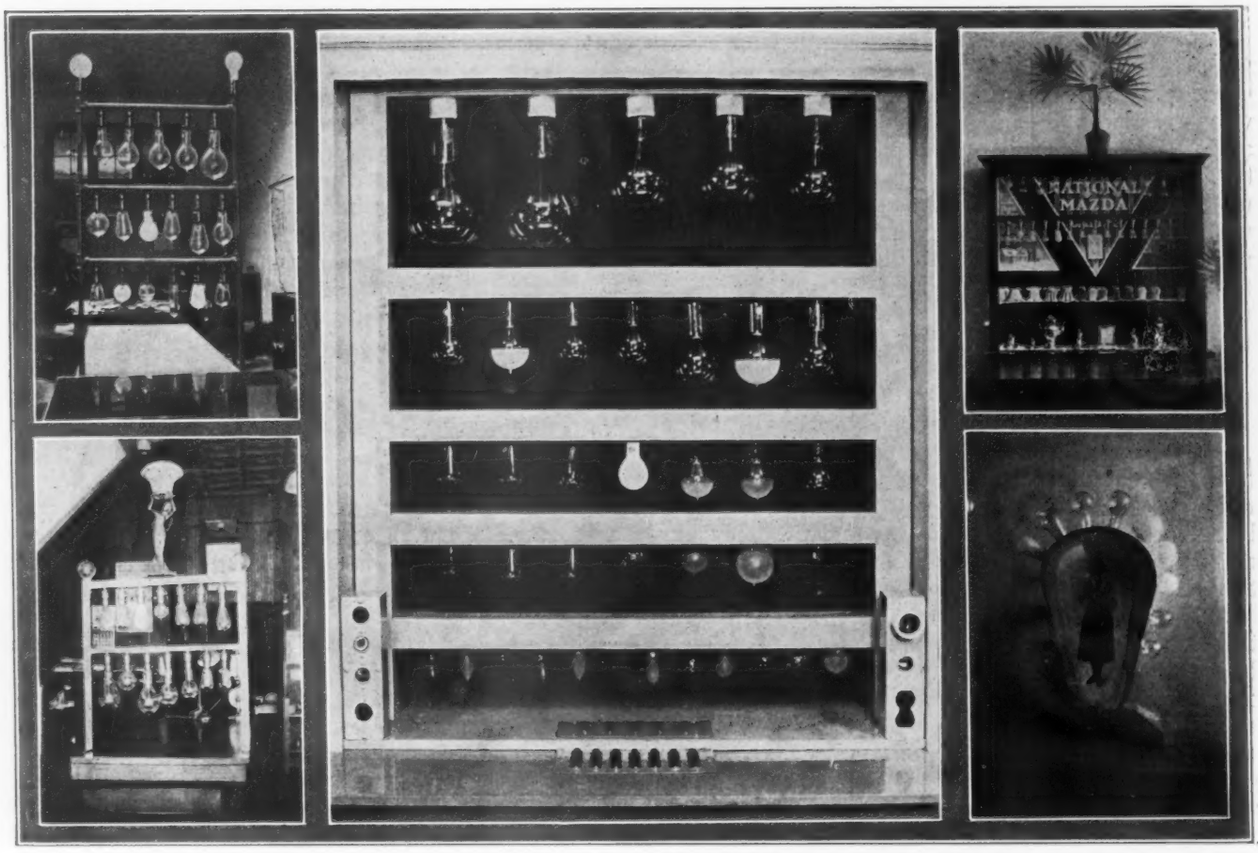
installed for them. But there is a far better way to carry this material—one which not only handles it efficiently, but at the same time makes an effective display of it. The notion show case, shown on the right of the accompanying photograph, is the answer to this problem. It is a regular show case equipped with many drawers and ideally arranged for these miscellaneous small articles of every electrical store. The eight-foot notion case has 60 drawers. One electrical dealer has to advantage put neat partitions in each drawer, thereby stocking and properly displaying 120 items in an 8-ft. show case. The surplus stock of some of these items is carried in the stock room in the rear and the show case stock replenished regularly from there. The use of such a case allows the store to be more attractive and, by effective display, increases the sales of these items, which carry a good profit, and for which there is a constant demand. For radio parts such a case is also most valuable. One, or more, of these cases should be included in the equipment of every electrical store.

Electrical dealers should realize that the Mazda lamp is the hub around which the electrical retail business should revolve. There is no item so vital to the success of electrical retailing as the Mazda lamp. It is the only item of importance that is sold to the same customer over and over again. Lamps bring customers into the store regularly and the dealer who gets their lamp business, practically always gets their other business. Dealers should take advantage of every opportunity to build up their lamp business. It is the key to the success of electrical retailing. Show me the dealer who is doing a good lamp business and you will show me the dealer who is making a success of his retail business.

In arranging the store, care should be taken in locating the lamp stock. The lamps should be placed toward the rear of the store so that customers will be brought through the store as much as possible. This is good merchandising practice. The same principle is followed effectively by department stores, who are recognized as the most successful merchants in the country. The goods which they sell the most are always located so that customers have to come through much of the store to purchase them. It will pay the electrical merchant to properly locate his lamp stock.

One of the best means of increasing the lamp business is by the effective use of a lamp display rack. These can either be made by the dealer, or purchased by him from practically all of the Mazda manufacturers. One of the accompanying photographs shows a lamp rack that can be easily made of conduit and painted, or sprayed, to match the finish of the woodwork and store fixtures. This rack can be placed to advantage crosswise of the counter in front of the lamp stock. Each lamp in this rack is turned off and on at the socket.

Another lamp display rack shown is made in the shelf space. This is attractive and effective and each lamp is controlled by push buttons located at the base of the rack.



Lamps can be displayed in any number of fashions. Four of the above racks were made by the contractor-dealer while the one in the lower right hand corner is furnished by the manufacturer at a nominal price.

Lamp displays like, or similar to, the third one shown can be purchased at about one-half their actual cost from lamp manufacturers. Lamps in this display are controlled by tumbler switches located beside each lamp socket. Such a display should be placed on the counter, or show case, in front of the lamp stock.

No electrical dealer can afford to be without some effective lamp display rack for it will materially assist him to better serve his lamp customers, improve the appearance of his store and let everyone who comes in know that here is the place to buy lamps.

The electrical dealer who interests himself in the merchandising principles and practices which have been successfully developed by other merchants is the one who is going to prosper. The suggestions outlined in this article are but a few of those whose success has been demonstrated. Study your goods, study the methods employed by the other fellow and endeavor in every way to become a better merchant, an excellent representative of the products you handle and a splendid server of the buying public.

Cost of Enclosed and Open Wiring

FEW cities or towns are without a legally established electrical code, supposed to provide against all contingencies, at least to a reasonable extent. All of these codes provide for authorized inspection, and electricians generally respect their provisions. The trouble arises from the fact that these codes provide solely for the safety of the wiring at the time it is inspected, or perhaps for a reasonable degree of assurance that short circuits and overloads will not occur naturally. They cannot and do not provide against experiments by the owner or occupant with a handy turn and just enough knowledge of electrical details to make him dangerous. Nor do they provide for the thousand and one emergencies that are sure to confront every electrical installation during its lifetime, unless it is protected against injury, changes and extensions by the unskilled.

These are conditions which probably prevail in four-fifths of the houses in this country enjoying electric service. They are not the fault of the industry, so much as that of the public. They could be avoided by the use of rigid conduit or a good armored cable, but the cost would be greater, and the average contractor finds that his customers insist on the lowest possible cost. Nevertheless, if the actual difference in the cost of open wiring and that in which a thoroughly good armored cable is used were more generally known, it is certain that architects and electrical contractors would more strongly recommend wiring for small residences. The smaller home is the most important unit from this standpoint, because more expensive buildings are generally wired with rigid conduit, architects and engineers understanding the necessity for protecting wires in these structures and the restrictions as to cost being less exacting.

With a view of securing reliable data on this subject, one of the manufacturers of armored cable recently arranged for the wiring of two similar houses—one with knob and tube and the other with armored cable, and kept an accurate and detailed account of the relative cost. The houses selected were two-family dwellings, of fairly good type, arranged with five rooms and bath on each floor and having a cellar and attic. Each room has a suitable opening for ceiling light, and provision was made for side lights in the bathrooms. Baseboard and porch light openings were located conveniently. The work in both houses was done by the same men, and the number and location of openings is identical.

Actual cost of the two types of wiring is given below. It should be stated that the workmen were unfamiliar with armored cable, this being the first new job on which they had used it exclusively, and the item of labor on the cable job is therefore probably higher than it might have been otherwise:

JOB NO. 628 — KNOB AND TUBE
3707-09 Cecelia Ave.

1,430 ft.	No. 14 Wire	$ 8.58
330 ft.	Loom	4.95
300	Knobs	2.67
300	Tubes	1.20
40	6-in. Tubes	.32
16	1-Gang Boxes	1.20
3	2-Gang Boxes	.45
2	3-Gang Boxes	.48
40 ft.	Speaking Tube	1.04
7	Speaking Tube Ells	.24
115 ft.	Bell Wire	.55
20	Hours Labor	22.00
	Permit	2.80
15 ft.	No. 12 Wire	.13
400 ft.	No. 14 Wire	2.40
60 ft.	Loom	.90
3	Cabinets	.96
3	2 Circuit Boards	.90
75	Knobs	.67
100	Tubes	.40
20	6-in. Tubes	.16
8	Base Receptacles and Plates	2.32
15	Single Pole Switches	2.80
4	3 Way Switches	.92
2	Mouth Pieces	.24
1	Door Lock	1.65
2	Transformers	1.45
5	Push Buttons	.90
2	Bells	.82
2	Buzzers	.78
8	1-Gang Plates	.88
3	2-Gang Plates	.63
2	3-Gang Plates	.66
12	Hours Labor	13.20
		$80.25

JOB NO. 116 — ARMORED CABLE
3711-3713 Cecelia Ave.

808 ft.	Wire Realflex	$36.36
57	B. X. Conductors	2.05
8	3-in. Outlet Boxes, ½" K.O.	.86
1	Concealed Receptacle	.19
3	2 Circuit Boards	.90
3	6 x 8 Cabinets	.96
2	Bell Transformers	1.45
20 ft.	Loom	.30
35 ft.	No. 12 Wire	.29
50	3 Wire No. 14 Realflex	4.30
10	½-in. Straps	.05
14	2/8-in. Straps	.05
17	Hangers	2.30
10	B. X. Boxes	1.50
12	H. H. Boxes No. 1101	1.35
3	2-Gang Boxes No. 902	.54
17	Shallow Ceiling Pans 4" x 1"	3.06
31	Copper Connectors	2.79
1½ lb.	Bell Wire	.55
28 ft.	Speaking Tube	1.04
8	Ells	.24
23	Hours Labor	25.30
	Permit	2.80
8	Base Receptacles and Plates	2.32
15	Single Pole Switches	2.40
4	3 Way Switches	.92
8	1-Gang Plates	.88
3	2-Gang Plates	.63
2	3-Gang Plates	.66
2	Mouth Pieces	.24
1	Door Lock	1.65
5	Push Buttons	.90
2	Bells	.82
2	Buzzers	.78
8	Hours labor finish	3.30
		$104.71

Percentage of Overhead Expense to Material and Labor Costs

By F. V. Mitchell
Accountant, San Francisco

AS a result of extensive investigation and system work, I am thoroughly convinced that the most vital necessity toward successful operation in the electrical contractors and dealers' industries is a correct knowledge of the percentage of overhead expense to material and labor costs by each and every firm engaged in this line of work. The reason for this appears so self-evident that it should seem unnecessary to have to dwell to any great extent upon its relative importance, but it is truly surprising to learn of how comparatively few operating in this mammoth industry are in possession of such valuable information. A great many seem to be content with the obsolete business method of guess work on this point instead of actual facts easily ascertainable from a properly outlined accounting and operating system.

The electrical contractors who do not know the correct percentage to add to their estimated material and labor costs to cover the overhead burden that the jobs are going to have to carry are invariably the ones who put in the extremely low bids for contracts, which are naturally accepted in the competitive market, and just as invariably their work results in a net loss to them after the completion of the jobs instead of the legitimate profit to which every firm in any line of business is justly entitled.

Electrical contractors should have their accounts properly subdivided so that at the end of each closing period the exact amount of overhead expense incurred during that period may be shown. The correct percentage of overhead expense to material and labor costs can then be ascertained through the simple arithmetical method of long division, viz., dividing the total amount of overhead expense by the total amount of material and labor costs. This percentage as shown should be added to the estimated material and labor costs on all jobs figured in the following period to cover the overhead or burden that it is reasonably certain these jobs will have to carry. After adding the correct percentage of overhead and arriving at an estimated job cost including overhead, a proper percentage should then be added to that amount to make a contract price that will net a fair margin of profit for the work. By the use of this safe and sound method the correct amount of overhead will be included in the estimated cost of every job and it is then an assured fact that whatever percentage is added thereon to arrive at a selling price will result in a net profit for the work instead of the inevitable net loss that always follows in the wake of guess work as to overhead.

The use of a fixed percentage for overhead applied without differentiation to all jobs, merely because John Jones across the street uses this figure, is a somewhat dangerous practice. The actual overhead costs of the contractor may be larger than this amount, in which case he will be losing money—or, on the other hand, he may be doing business at a lower cost than his competitor—which means that he is losing the advantage of the lower bids made possible through his greater efficiency.

Another very serious and costly blunder being made quite frequently is the confusion of the percentage of overhead to sales with the percentage to material and labor costs. In the course of my work in the industry I have been informed by electrical contractors that they have been adding a certain percentage to material and labor costs supposedly to cover their overhead fully and have found upon investigation that the percentage being used was in reality the percentage of overhead to their sales and not to their costs, the former naturally being very much lower than the latter. To point out the difference more clearly I am referring to the following example of a profit and loss statement in round figures:

Net Sales	$100,000	100%
Less Material and Labor Costs	65,000	65%
Gross Profit on Sales	35,000	35%
Less Overhead Expense	25,000	25%
Net Profit from Operations	$10,000	10%

The percentage of overhead expense to sales as shown in the above illustration is 25 per cent, whereas the percentage to material and labor costs is 38 per cent, therefore, it can now be readily seen that 38 per cent would have to be added to material and labor costs to cover overhead in this instance and not 25 per cent—a mistake which, as I have noted, is quite often made through confusion of the two percentages.

The overhead expense of a business should always include a reasonable salary for the proprietor as he performs duties necessary to its successful operation and remuneration for his services must accordingly be shown as an operating expense. Other principal items of overhead expense are advertising, automobile expense, bad debts, depreciation of equipment, insurance, light and power, rent, salaries and wages, stationery and printing, taxes and licenses, and telephone (the caption of salaries and wages not to include labor charged for directly on jobs).

One of the most important steps that can be taken by the electrical contractors and dealers in the Pacific Coast states toward the solution of their present day problems is the installation of a uniform accounting and operating system that will furnish them the proper information as to the results of their operations in time to adopt the logical corrective methods necessary to stabilize the industry.

Who Shall Write the Electrical Specifications?

By A. L. Nudd

Electrical Engineer, Allied Architects Association of Los Angeles

VITAL to electrical progress is the proper application of electrical principles to the building industry at large. The question immediately arises, "Who shall dictate the manner of making such application, the architect, the contractor or the engineer?"

A well laid out plan and rigid specifications should put all bidders on an equal bidding basis, assure uniform bids from the contractors who conscientiously figure their work, and establish the contractor's profits, fulfilling a gap in the contracting field. Complying with all the owner's requirements, it minimizes the contract extras, definitely fixing the appropriations. Such specifications, when properly enforced by the architect, lessen his time required by that particular phase of the building, all of which tends toward establishing a harmonious relationship between the owner, architect and contractor, and results in a boost to the electrical industry.

The progressive and successful architect of today is obliged to have a general knowledge of the various phases of building construction and is not proficient in all details thereof, yet he realizes the place an efficient electrical installation holds in the building he is projecting and seeks the services of a specialist to accomplish that end.

One of the principal prerequisites in the training necessary for the engineering of the electrical installation is the constant study of the electrical material market, for its prices, quantities readily obtainable, new equipment, and the relative merits of each article. This study is what makes the successful contractor and electrical engineer. The architect hasn't time for studying the materials in every building terials in every building trade. The electrical engineer by cooperating with the material men, keeps abreast with the markets and obtains announcements ahead of the contractor.

The electrical engineer is familiar with the purpose of the building, he is trained in its electrical requirements and has a working knowledge of the installation of the equipment. The contractor is not familiar with either the purpose of the building or its requirements, yet he is thoroughly familiar with the installation. Each has his place in the completed project.

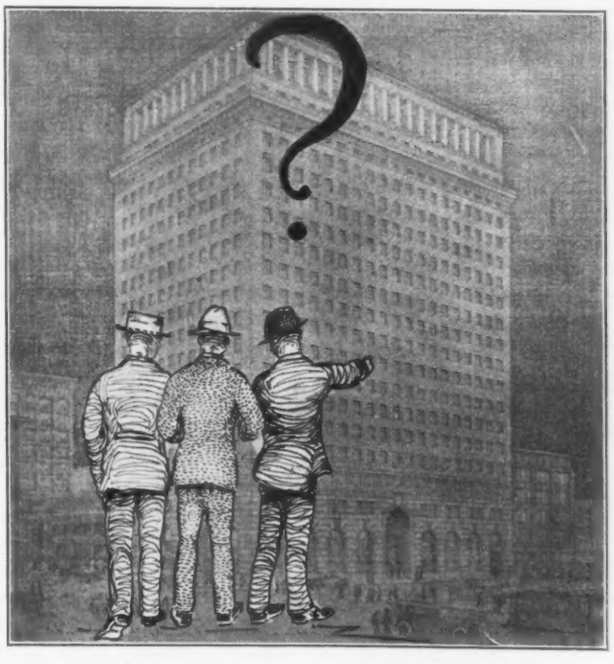
There are but few contracting firms who are equipped to handle engineering problems, since they haven't on their staffs men who are skilled in drafting and specification writing. The electrical engineer has his organization built up for that particular purpose.

During the progress of the building it becomes necessary for the architect to check the specifications against the installation, and again he is obliged to call upon the specialist. The electrical engineer being familiar with each item of the electrical specification he has written, stands ready to assume the inspection duties and render an unbiased opinion in case of dispute.

The owners' problems of financing a building demands of the engineering features efficient yet economical equipment. Due to keen competition, the contractor's tendency is to specify material from which he can obtain the greatest profits, or that which his competitor cannot supply. The electrical engineer specifies his material with the whole electrical industry at heart and an efficient installation in mind.

The contractor's usual compensation for writing the electrical specifications is an obligation on the part of the architect which is a policy better judgment would dictate against. Experience proves the engineer's percentage fee compensation the more desirable.

Certainly the electrical specifications should be written by a specialist—one trained in that particular phase of the industry. The electrical engineer fulfills this requirement, he is familiar with the purpose of the building and its requirements, has his organization to handle the work, is ready to render an unbiased opinion, his services assure economy, and he receives the compensation for his services to which he is justly entitled.



Architect, Engineer or Contractor—which?

The Contractor-Dealer as a Credit Risk

By Rey E. Chatfield
Secretary-Manager, Electrical Service League of British Columbia

INTERPRETATION of the term "credit risk" by credit men in the electrical industry is likely to differ in various communities but generally one finds the accent on the word "risk" rather than on the word credit. The contractor-dealer is deemed a distinct risk by most credit men, which opinion is based on his ability to meet his obligations promptly when due. Pessimism in wholesale circles which might prevail under these conditions is more or less softened by the fact that each community boasts several contractor-dealers who not only succeed in doing a comparatively large volume of business, but who discount their bills promptly. This adds considerable brightness to a situation that might otherwise be very discouraging.

Unfortunately, where one such contractor-dealer is in business there are nineteen or twenty who pay their bills with greatest difficulty provided they enjoy the privilege of credit at a wholesale house at all, or who must pay cash over the counter for such merchandise as they purchase. Sixty days, ninety days, or even longer time is allowed such dealers and they seem to be but one jump ahead of bankruptcy. This being the case there must be something radically wrong with an industry or branch of an industry that produces such an unfavorable credit condition.

The Four Classes of Retailers

An understanding of the problem can only be reached by an analysis of the contractor-dealer branch of the electrical industry. The retail distributor branch of the industry can roughly be divided into four classifications:—

First: The electrical dealers.
Second: The electrical contractor-dealers.
Third: The electrical contractors.
Fourth: The non-electrical distributor.

The fourth class of retail distributor is not of serious concern to credit men in the industry because he is generally a successful merchant distributing other lines of merchandise. He enters the electrical field because he is attracted by the possibility of profit in distributing electrical goods. His business is confined to the sale of various appliances and his experience as a merchant teaches him the need for careful buying and rapid turnover of stock. Other departments in his store may help pay the electrical wholesaler's bill, but what the credit man is interested in primarily is the merchant's ability to meet his obligations when due and not whether the sale of electrical merchandise paid the bill.

The first classification, viz., the electrical dealer, is usually a specialist, that is, he pushes some particular electrical merchandise, it may be washing machines, it may be vacuum cleaners or ranges. However, the fact that he can sell aggressively a particular piece of merchandise successfully as a specialty stamps him either as a splendid salesman or a shrewd advertiser or a combination of both. Such electrical merchandise as he may sell other than his specialty is incidental. His firm makes no wiring installation and a sale means either a cash transaction or a part cash and part negotiable paper transaction which serves very well to meet the demands of the credit man.

Such a dealer's credit is good and he pays promptly until he lends an attentive ear to the salesman with a long discount on a quantity purchase. If the average electrical dealer makes such a quantity purchase he automatically moves himself and his firm from the list of customers at which the credit man smiles to that list which produces a frown and lines of worry in every credit man's brow. Any electrical dealer who purchases a quantity of merchandise sufficiently large to cut down his rate of merchandise turnover below four turns per year is making trouble for himself and for the credit man of his wholesale house.

Quantity Purchases Bring Difficulties

There is a double responsibility for the dealer who gets into financial difficulties by making a quantity purchase for a longer discount which will cut down his rate of turnover even one turn per year. That dealer showed lack of real merchandising knowledge, but the manufacturer or jobber who permitted such a sale to go through justly earns the difficulty he may have in collecting his account. The average electrical dealer has limited capital and any unusually large or quantity purchase soon ties up his liquid assets in slow moving merchandise. No matter how promptly he may have paid his bills in the past, when his available capital is tied up in merchandise which takes time to move he becomes "slow pay" and a poor credit risk.

The second classification, viz., the electrical contractor-dealer, is perhaps the best and at the same time the worst credit risk in the branch of the electrical industry under discussion. This comprises the largest group of the four classifications. The contractor-dealer merchandises appliances and also makes electrical wiring installations. His path is fraught with all the dangers of the exclusive electrical dealer but he has in addition the gamble of estimating and installing electrical work for a predetermined and fixed price. As a merchant he is selling merchandise with little diversity in types of articles offered; in other words, electrical merchandise is a short line. The limited scope offered for the merchant places the electrical contractor-dealer on a par with other exclusive shops such as a ladies' ready-made apparel shop or a man's hat shop. Unfortunately for the contractor-dealer, the policy of a fixed resale price on appliances does not give the dealer sufficient margin to profitably conduct his

business. Conditions such as these force the contractor-dealer to conduct an exclusive or specialty shop on a "grocery store" margin of profit. The public has been educated in buying from an exclusive shop to pay specialty shop prices and the exclusive shop owner in other lines of business has learned that he can make the greater margin of profit needed to conduct such a business.

A recent analysis of an appliance price list published by a firm of national reputation as manufacturers of electrical appliances revealed some rather startling facts. Staple merchandise or appliances of every day sale carried what might be termed a long profit; at the same time slow moving appliances such as tailor's irons which are staple merchandise, but from their very nature must be slow moving, carried a very narrow margin of profit. Some slow moving appliances which the dealer must stock carried as low a margin of profit as 11 per cent gross when purchased in standard package quantity.

The Varying Margins of Profit

It is a recognized and fundamental principle of merchandising the world over that slow moving merchandise must, if it is desired to make a profit, carry a longer margin of profit than goods which move more rapidly. Yet a nationally known maker of electrical appliances decrees that his slow moving merchandise must be sold at a much lower margin than the rapidly moving merchandise. Probably electric irons are the most staple and rapidly moving of all electrical appliances, yet many manufacturers fix a resale price on irons which would make a profit if he turned his stock but three times a year, while appliances that move slowly are priced at a margin that would necessitate a turnover of at least twelve times a year, which is practically impossible.

It is true that sales volume is desirable, but sales volume attained through increase in doubtful and uncollectible accounts is unsound practice if carried too far. One of the crying evils of the electrical merchandising branch of the industry is "Easy Credit." If wholesale houses would enforce strict credit regulations the competition of "the man who does not know how" would quickly be eliminated.

It is this competition of the man who does not know how—the man who is a worry to credit men—the man who takes sixty days, ninety days or longer to pay his bills because the wholesaler shirks his responsibility in enforcing some credit regulations,—that makes the rest of the contractor-dealers dubious credit risks.

So much for the selling end of the contractor-dealer business. The speculative part of the business, however, is the contracting or construction department—here is where the competition of "the man who does not know how" works such havoc. This competitor does not know how to estimate labor and does not know how to price a job once it is figured. Preparing an estimate properly calls for sufficient engineering skill and experience to devise an economical and efficient layout, to "take off" material accurately, to estimate the labor necessary to install that material and to price the job when the net estimates are made.

The price figured on a job can be determined with the same precision and accuracy used in measuring runs of pipe or counting outlet boxes. Too many contractors "add" 20 per cent for profit. Others find from an accountant that their overhead is, say 25 per cent, which expresses the relation of cost operation to volume of business, and use this percentage as an addition to net cost and not as a percentage of resale on a job.

Thus the contractor-dealer has two problems to face—proper estimating, and proper pricing. A number of estimating systems have been developed which take much of the guess work from estimating labor for electrical construction provided they are intelligently used. Too few contractor-dealers use any estimating system at all but prefer to visualize a job part by part and rely upon their practical experience to guide them in "estimating" (guessing) the labor necessary. This is often disastrous practice because all journeymen do not produce the same amount of work in a given period while the contractor-dealer who visualizes his job as a means of estimating labor is prone to use as a measure the work a particular journeyman and helper can produce in a day.

"Time and Material" Basis Most Successful

The most successful contractor-dealers in the West, however, do no actual contracting work. Their construction work is all done on a "time and material" basis with a result that their business has grown and prospered. There is no gamble in doing work on this basis but there is a definite responsibility on the part of the contractor-dealer to treat his customer and his customer's money with the same care he would treat his own money if a job on a time and material basis were a straight contract. These successful contractor-dealers which are at present the leaders in their respective communities realize their responsibility to a customer and capitalize their ability to render such service. It takes real sales ability to conduct business along these lines but contractor-dealers who follow this practice find results amply repay their efforts. Investigation of the methods of the most successful contractor-dealer establishments in the coast cities shows that in nine out of ten cases the successful firms do no straight contracting business. By superior salesmanship and superior service they build up a reputation that draws business despite the competition of low prices from the man who does not know how. It is these men who raise the contractor-dealer class from what would otherwise be a hopeless condition.

Theoretically, the straight electrical contractor should be the best credit risk of all four classifications for many reasons. By comparison his overhead expense or operating cost is lower than the contractor-dealer but the risks he takes are greater. The practice of drawing progress payments on construction work each month as the work progresses

should make it possible for a job to finance itself. Progress payments vary from 75 to 85 per cent of time and material expended on a job each month. As no successful contractor takes a contract with a markup of less than 20 per cent it is nearly impossible to get each month from these progress payments the money needed to meet the accounts of the wholesaler and to replenish the fund from which wages of journeymen are paid. With thirty-day progress payments and thirty-day credit at the wholesale house a contractor need have only funds sufficient to finance payroll for a month and still be a good credit risk.

The size of this fund to meet payroll and incidental expenses is what makes the contractor a worry to the credit man. This fund is the capital of the contractor and it is usually a somewhat limited amount. When the contractor has several jobs in progress he is hard put to meet the weekly payroll. Money that would ordinarily pay the material bill is used to meet the payroll. The contractor having used his progress payment in this way is still quite solvent if his jobs are properly estimated and priced and at the completion of these jobs in progress would be able to meet his obligations. After waiting forty-five or sixty days, however, for a payment the credit man must have money. The harder he presses the contractor for money the harder that individual tries to get more jobs to produce the necessary money. Getting jobs under these circumstances generally means cutting prices and cut prices lead to bankruptcy. Fortunately contractors realize this and the experienced man is usually able to make satisfactory arrangements, either with his wholesaler or with his bank, to meet the temporary needs.

Real Need for Revision of Prices

Summarizing the unfortunate condition of credit in the contractor-dealer business, we find the non-electrical distributor of electrical goods a good credit risk; the electrical dealer a good credit risk; the electrical contractor a fair risk; and the contractor-dealer with rare exceptions the man who causes worry among credit men. The reasons for this are many but chief among the multitude is a real need for revision of resale prices to conform to standard merchandising practice. The strict enforcement of rigid credit regulations would also help the contractor-dealer in the long run but would undoubtedly work hardship on many for a time. Undercapitalization, which is now a fault of this branch of the industry, can be remedied when conditions are such that capital can earn a reasonable return in the business. The gradual education of the contractor-dealer along the lines of estimating and accounting is progressing but has not yet reached the point of accomplishing the desired results. As time goes on, however, there will emerge from the present chaotic condition more and more contractor-dealers of a financial and business standing which will compare favorably with the strong retailers in other lines of business.

The Finance Company and the Contractor-Dealer

By C. Wilbur Fritz
Vice-President, Republic Company of California, San Francisco

UNTIL recent years, there have been four important factors in the distribution of electrical goods and no one could operate successfully without the other. They were the manufacturer, jobber, contractor-dealer and consumer. But modern business has added another to the list, the finance company, for the finance company today is as essential to all the other four as they are to the finance company. And the more progressive a manufacturer, jobber or contractor-dealer, the more essential becomes the finance company, for the finance company exemplifies present day progress. And progress and success is the aim of all.

The growth of the installment or deferred payment method of selling has caused this entrance of the finance company into the electrical fraternity. This method of selling merchandise has existed for a number of years but it is only within the last few years that the electrical industry has seen its value to themselves and adopted almost universally this method to develop volume. However, when the contractor-dealer has arrived at a point where the amount owing him in installment accounts has reached an amount where he is becoming hampered and restricted for want of cash, it is time to do one of three things—refuse new business, obtain additional capital in his business or arrange with a finance company for the discount of his installment contracts. It is important and fundamental, though, that such a discounting arrangement be self-liquidating and have no other due date than the collateral itself.

Most finance companies are operated along similar lines, viz.: the purchase of installment contracts, payable in monthly or weekly payments, at specified discounts for various maturities. The companies vary in their policies in that some permit the dealer to make collections, others make their own collections; the cost of service varies, and there is also a great contrast in the amount of red tape connected with the services of different companies.

The Republic Finance & Investment Company of Indiana and The Republic Company of California, the companies with which I am associated, always main-

tain one set policy—give the dealer the most we can for the least possible cost and eliminate as much red tape as possible. We accomplish this by handling the installment contracts in schedules of ten to twenty or thirty or more rather than individually—this not only eliminates detail for the dealer but overhead for us, and the less the overhead, the less our costs, resulting in cheaper service to the dealer. In addition to actual monetary transactions, Republic service includes personal assistance in bookkeeping methods, advanced collection ideas and follow-up methods and even ideas pertaining to proper merchandising which we believe will be helpful to the dealer.

For a number of years Republic financing has been limited to installment sales of the larger appliances in the electrical industry, such as washing machines, vacuum cleaners, ranges, etc. Our business, however, has led us to observe the methods of selling in other lines and our attention was attracted to the initiative used by a number of furniture houses to obtain sales of furniture in homes where the furniture then in use was 15 or 20 years old, and a large volume of business was obtained by selling the idea to the housewife to keep her home modern and up to date, a thing she could not possibly accomplish without new living room and dining room furniture. That sort of selling brought them a good volume of business—but Mr. Contractor-Dealer, how many housewives have you attempted to sell new and modern up-to-date electrical fixtures? Why shouldn't the housewife be just as interested in her electric fixtures as she is in her dining room chairs? Certainly the fixtures are in plainer view. And when you get that fixture job, a suggestion for a convenience outlet in the dining room for the percolator or waffle iron, and several in the living room for lamps, and one or more in the bedroom for a curling iron wouldn't be amiss. And when you find out all that the family would like to have and submit an estimate, if they can't afford to pay all cash, their credit on a lease contract where they own their home should certainly be good.

Another way that your volume can be increased, in our opinion, is on new homes. Isn't it true that nine out of ten owners that come in to select fixtures have to stay within the contractor's allowance, for arbitrary figures say $100, and they look at first one fixture and then another and finally make their choice like many people buy a meal, from the price column. Why not give them what they want, probably a $200 job, and take your $100 as a first payment and permit them to pay the balance at $15 or $20 per month?

Then, again, how about all the unwired homes in your town? The business is there to be had and it certainly isn't a hard job to sell owners on the idea of electricity in their home—you only have to sell them the idea that they can afford it and if you were to offer them the privilege of installment payments, you will get the business.

As stated above, these are some suggestions of business to be had in the electrical industry observed by Republic Finance officials, and believing these methods sound, we have worked out plans for financing installment contracts on this basis. This is but a step forward but we believe that it will be a great sales stimulus for the contractor-dealer.

This plan has already been put into operation and within a few weeks one contractor-dealer in San Francisco has obtained dozens of jobs on unwired homes and his prospects have been made customers through his offer of installment payments.

This class of business will require just as much caution as to the credit risks as any other and we always advise obtaining credit information regarding the house owners and whether or not they are in the habit of paying their bills promptly. If there is a retail credit association in your town, I would certainly advise getting a report on each customer. The contractor-dealer cannot afford to take chances of having uncollectible accounts, for in his ability to collect promptly lies his ability to succeed. One bad account eliminates the profit from 6 or 7 good ones, so why take the chance of working for no profit? And note that I have said collect **promptly**, for promptness of collections determines the turnover and one can better afford to do a job at 10 per cent net profit and turn his capital over on this basis once each month, rather than make 25 per cent and only get a turnover every 3 or 4 months.

In the sale of any kind of merchandise, the salesman will invariably follow the lines of least resistance and if selling a vacuum cleaner, will usually, if his prospect appears to hesitate, offer the minimum terms $5 down and $5 per month, whereas, had he used proper salesmanship and permitted the prospect to suggest his own payments, he would invariably get a larger first payment and larger monthly payments. The longer the terms of any sale the slower the turnover and of necessity the contractor-dealer must add an additional profit to take care of the slow turnover. It is therefore essential to shorten the terms of any sale to the point that you feel confident your customer can meet, but never make the mistake of making the payments so large that will cause him to be delinquent—you might better make the payments smaller in the first place, for when an account once becomes delinquent, it requires three or four times the attention it previously did.

Modern business accepts the installment method of selling as the greatest potential builder of sales but we must all watch closely that we do not overreach and attempt to stretch our credit facilities to the breaking point. However, the finance companies are carefully watching this situation and attempting to keep the credit structure sound and with the support of the manufacturer and jobber, can assist the contractor-dealer to the end, that he will be a success away and beyond his present status, for the opportunities that await the contractor-dealer are wonderful and it lies with him and with him alone to grasp those opportunities and make that success which he will rightfully deserve.

The COAST Outlet
ELECTRICAL CONSTRUCTIONISTS' and DEALERS' NEWS

Electrical Construction

By E. Earl Browne

GROUND connections in recent years have come to play an increasingly important part in electrical systems of almost every kind. One of their chief functions is that of protecting persons and property against electrical dangers by keeping some point in the circuit or some conducting body, at, or as near as possible to, the potential of the ground. The method of protection was first suggested by Prof. Elihu Thomson in 1885, who patented it and dedicated the patent to the public. The actual danger arises from the entrance of current and voltage from the high voltage circuit upon the low voltage circuit, either through a leak in insulation between transformer windings, or through a contact or connection accidentally formed between wires. Where depended upon for the above protection, the grounds should be carefully made, because if they are poorly made or inadequate for the purpose for which they are intended, loss of life or serious personal injury may result. See Figs. 1, 2, 3 and 4.

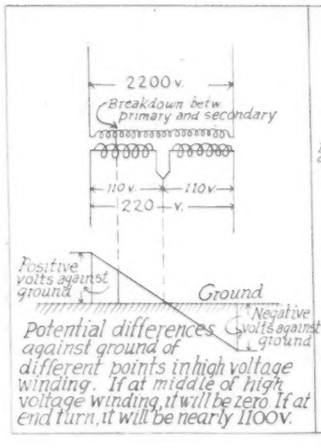

2200 v.
Breakdown betw. primary and secondary
110 v.
110 v.
220 v.
Positive volts against ground
Ground
Negative volts against ground
Potential differences against ground of different points in high voltage winding. If at middle of high voltage winding, it will be zero. If at end turn, it will be nearly 1100 v.

Fig. 1.

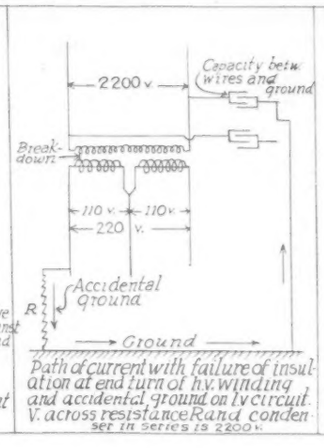

2200 v.
Capacity betw. wires and ground
Break-down
110 v.
110 v.
220 v.
Accidental ground
R
Ground
Path of current with failure of insulation at end turn of h.v. winding and accidental ground on l.v. circuit. V. across resistance R and condenser in series is 2200 v.

Fig. 2.

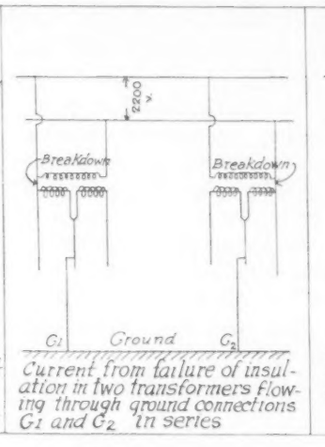


Fig. 3.

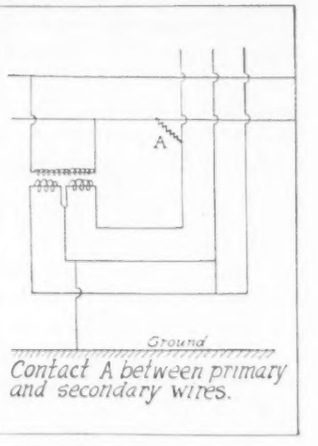


Fig. 4.

The terms "ground," "grounded system," "permanent ground," "ground connection" and "earth connection," as herein used, refer to electrical connections **intentionally** made between electrical circuits, or conducting bodies in close proximity to electrical circuits, and metallic bodies embedded in the earth, such as water pipes, plates or driven pipes.

Every connection between electrical circuits and ground or nearby conducting bodies made, **not by design**, but by accident, as by the breaking of wires or failure of insulation, is referred to as an "accidental ground."

In the every day work of the electrical contractor the process of grounding in buildings is inexpensively made by attaching the ground wires to water pipes as it is recognized that no danger of electrolysis to water pipes exists by stray alternating currents as may result from grounding low-potential,* alternating current circuits. Direct current neutrals are not permitted to be grounded within buildings. (See 1920 National Electrical Code Rule, 15A-b&c.)

In connecting ground wires to single phase, low-voltage circuits, the usual practice is to connect the middle wire of three-wire system as in Fig. 5, while with a two-wire system it is usually necessary to attach to one side of the circuit as in Fig. 6. On polyphase circuits the ground wire should be attached to the point in the circuit or to the circuit wire which will give the lowest voltages between wires and ground. Figs. 7 and 8 are diagrams of some of the polyphase transformer connections in common use. The voltage between phases in each case is assumed

*Low-Potential means any circuit attached to any transforming device or machine which develops a difference of potential between any two wires or between any wire and the ground of not over 600 volts.

to be 440. Fig. 7-a represents a two-phase, three-wire secondary circuit grounded at the middle wire. Here the voltage between either outside wire and ground is 440. If one of the outside wires were connected to ground the other outside wire would be 622 volts above ground (440 volts $\times$ 1.414 = 622 volts), thus causing an increase in the life hazard over that obtained with a ground connection on the middle wire. Fig. 7-b shows a two-phase, four-wire circuit in which the phases are independent of each other. In this case the middle points of each winding can be grounded, putting each of the four wires at 220 volts above ground.

(c) Four-wire, interlinked externally, at the middle point of one of the windings.

Fig. 8-a shows the secondary circuit of a three-phase, three-wire delta-connected bank of transformers, with the middle point of the winding of one of the transformers connected to ground. The maximum voltage to earth is 383, or 87 per cent of the line voltage, and the minimum is 220 volts.

In Fig. 8-b is the same circuit with one corner of the delta grounded instead of the middle, which, of course, takes one wire at earth potential under normal conditions of operation, while the others are at full secondary voltage above ground.

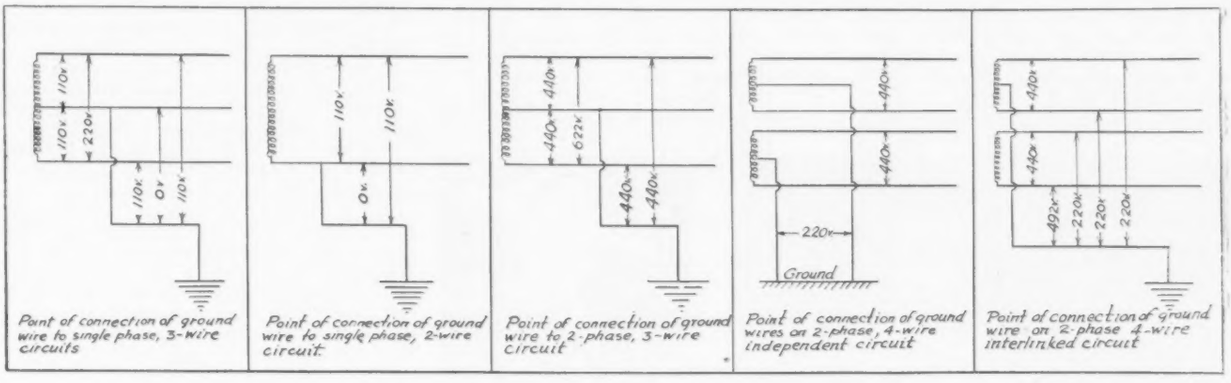


Fig. 5. Fig. 6. Fig. 7a. Fig. 7b. Fig. 7c.

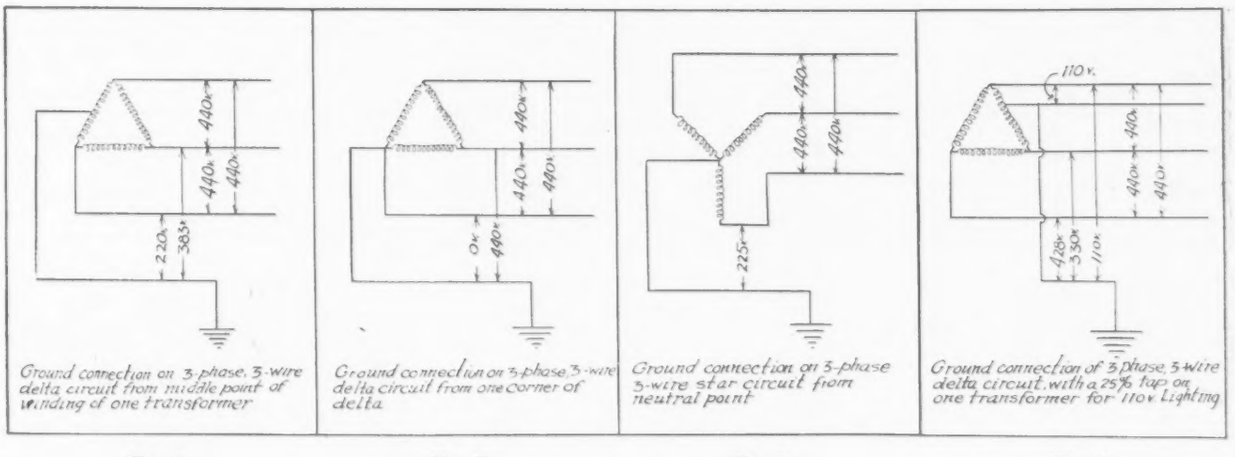


Fig. 8a. Fig. 8b. Fig. 8c. Fig. 8d.

In Fig. 7-c, it is assumed that the phases are interlinked at the motor taking energy from the circuit, so only one wire or the middle point of one winding can be connected to ground. The latter gives 492 volts between one outside wire and ground. The former gives 440 volts between two of the outside wires and ground. In two-phase circuits, therefore, the best points to ground are:

(a) Three-wire, at the middle wire,

(b) Four-wire, independent, at the middle of each winding,

Fig. 8-c represents a star-connected, three-phase, three-wire secondary circuit with the neutral point grounded, the voltage to ground of any wire being 58 per cent ($1 \div 1.732 = .58$—) of the secondary voltage, in this case 255 volts.

Fig. 8-d is a common connection where a 25 per cent tap is brought out from the windings of one transformer to give 110 volts for lighting. The proper point to ground in this case is this tap, because one wire of the lighting circuit is at ground potential while the other is at 115 above ground.

A Correct Knowledge of Overhead Cost Is Needed

Failure to Know the Percentage of Overhead Expenses to Labor and Material Costs Results in Loss to Contractor

By F. V. MITCHELL*

To devise and install an efficient accounting and operating system necessitates a thorough analysis and investigation of the entire business from the very bottom up. You have done, individually, a great deal towards bringing about the correct estimate of direct material and labor costs on jobs for contract bid purposes, but I want to sound the keynote to my mission by telling you frankly that the majority of electrical contractors that have engaged me to install systems, possessed sadly mistaken ideas of their correct percentage of overhead expense before I showed them in black and white what it actually was. It appears to me that there are a great many more groping in the dark, as far as knowledge of correct percentage of overhead is concerned.

net loss to him. But there is the whole trouble in a nutshell, the contractor not knowing his correct percentage of overhead, naturally makes the wish father to the thought and uses a considerably lower figure than he should in arriving at a contract price.

Often through confusion, the percentage of overhead to sales is used instead of the percentage to costs. Such an error as this is a very expensive one as the former is naturally very much lower than the latter.

The old isolation idea in business is done, for today the success of an industry of this size depends chiefly upon a correct knowledge of operating costs by the individual members. There is no way that this can be ascertained better than through the medium of a uniform,

All of the branches of the electrical industry gathered in groups similar to this one to discuss their problems at the Donner Lake Convention of the Contractor-Dealers. From left to right the men are: "Dent" Slaughter, Allied Industries, Inc., San Francisco; Walter Spencer, Spencer Electric Company, Oakland; F. V. Mitchell, public accountant, San Francisco; R. S. Prussia, district illuminating engineer, Westinghouse Lamp Co., San Francisco; R. L. Elzia, Electric Meter Shop, Fresno.

Before attempting to prepare a bid on construction work, you should have before you your actual percentage of overhead to material and labor costs so that you are in a position to know exactly what per cent to add to your estimate of material and labor costs to cover your overhead and give you a fair margin of net profit on your work. Guesswork as to percentage of overhead is absolutely the surest and quickest road to disaster that you can take. That is not a haphazard prophecy of mine, for I have seen many instances of this while reviewing the records of the majority of electrical contracting firms that have failed.

Needless to say, no electrical contractor would take a job if he knew beforehand that it was going to result in a

*From a paper presented at the Donner Lake Convention of the California State Association of Contractors and Dealers.

simplified accounting system for the common good.

As I see it, you men of the electrical contracting and dealing industry collectively represent one of the mammoth industries of this great commercial country today. It seems to me nothing short of overlooking a wonderful opportunity that you do not make some concerted effort to place your business upon a fair money-making basis instead of continuing in the throes of cut-throat and reckless competition.

I have seen your business from every angle. I have been called in by contractors and dealers who were showing a small profit at the end of the year, but a profit which was not satisfactory to them in view of the amount of money invested. I have been sent in by creditors in time to help the proprietor save a business and place it back on its feet for himself, and at other times I have been called on the scene too late to do other than save as much as possible out of the wreck for everyone interested. The lack of knowledge of correct percentage of overhead to material and labor costs was one of the principal roots of all these troubles. When everyone of you has been shown the correct figures relating to your own business such as I have done for a number to date, there is going to be a general disappearance of the old bugbear, reckless competition, but not until then. Why not get busy on this important and vital matter instead of waiting until more of your good members have had to close their doors?

It should be the aim to get the books and records of the individual members in shape so that the correct result of operations can be easily obtained and proper corrective methods be taken both individually and collectively to place the business as a whole on a legitimate basis, instead of the hand-to-mouth existence many in your industry are operating under today. If you all know your correct percentage of overhead, your industry is lifted into the higher plane of competition—that of skillful workmanship and management.

In all communities there is that man who takes the job at the prohibitively low figure and feels sure he is going to make a little money out of it because he is laboring under the mistaken impression that his percentage of overhead to material and labor costs is considerably lower than it actually is. I hear of statements made by some large electrical contractors to the effect that they are operating on an overhead of variously from 5 to 15 per cent of their material and labor costs. There may possibly be some chosen few with an overhead as low as this. I would almost be willing to risk an opinion, based upon my experience with a fairly representative lot of northern and central California firms, that the average overhead to material and labor costs, at the present time at least, is between 25 and 30 per cent. Of course, I always include in the overhead of a business a fair salary for the proprietor of the business as he is performing duties for which someone else would have to be employed.

While I am laying a great deal of stress upon the lack of knowledge of correct overhead as one of the principal seats of your troubles, let us not overlook the dollars and cents that are being thrown away every day through gross neglect in the handling of accounts receivable, the financial backbone of your business. I have been astounded to see the loose methods followed by some electrical contractors and dealers in keeping track of what customers owe them and, needless to say, there is always the resultant loss out of your pockets that follows in the wake of careless bookkeeping, especially in attempting to maintain a record of accounts receivable without the proper control or profit.

California Contractor-Dealers Adopt Code of Ethics

Among the things accomplished at the Donner Lake Convention of the California State Association of Contractors and Dealers was the adoption of a code of ethics that contains the ob-

jects of the Association. The code as adopted is as follows:

Believing electricity to be the greatest servant of mankind,—the objects for which this Association is formed, are:

1—To assist the public in becoming more generally acquainted with the many and varied uses and applications of electricity to the duties of every day life.

2—To make the offices and stores of members the "service stations" for such help and general information of an electrical character as the public may seek; being appreciative of the fact, that its welfare safeguarded and desires efficiently and courteously served, is the success of any business.

3—To be ever watchful for improved methods in business, that the highest standard of service may be given customers.

4—To impart to the customer a "homey" atmosphere while in the office or store, having him feel his visit is a welcome one and that we are glad to serve him.

5—To realize that satisfied customers are the best asset of any business and the surest road to success. That promises made good is reputation maintained; promises broken are beyond repair. That while we are business men and anxious to succeed, we desire no success not founded on the principle of satisfied customers and the Golden Rule.

6—To distribute among members the fullest information obtainable in regard to all matters affecting the electrical construction and retail electrical merchandising business.

7—To bring about more friendly relations between electrical contractors and retail dealers and others engaged in the electrical industry.

8—To assist in standardizing and marketing high grade electrical material and apparatus of American manufacture.

9—To encourage its retail members in the maintaining and conducting of attractive electrical stores.

10—To elevate the standards of electrical installations and to cooperate with boards of underwriters, state and municipal inspection departments, engineers, architects, public utility companies and municipal electric light and power companies, to generally better conditions by the reduction of fire and accident hazards and the rendition of improved service.

Association Formed by Alameda County Electrical Men

After an intermission of almost two years, during which no permanent contractor-dealer association existed, the contractor-dealers of Alameda County, Calif., have perfected the organization of the Electrical Contractors and Dealers' Association of Alameda County. From the members of the industry in the cities of Oakland, Alameda, Berkeley, Fruitvale and Piedmont, forty memberships have been secured since the association was started about June 1 of this year.

The purpose of the organization is to foster the exchange of ideas that will lead to the advancement of the industry in general and in particular as regards the promotion of discussion that will lead to the forming of a correct basis for the estimating of work so that the contractor will secure a fair profit. The organization rules prohibit the fixing of prices by group arrangement, but urge the adoption of business methods that will enable the contractor to figure the cost of work with more certainty so that he will secure a profit by doing the work at his estimate figure.

Meetings of the association are held every Tuesday evening at the Builders' Exchange Building and men prominent in the industry are invited to address the body. F. V. Mitchell, public accountant, addressed one of the first meetings of the organization, using as his topic the need for an absolute knowledge of the overhead cost of the shop. His talk dealt principally with the contractor's business from the point of view of the accountant. A. E. Rowe, Garnett Young & Company, San Francisco, spoke before the July 17 meeting and told of the advantages that could be obtained through cooperation.

Attendance at the meetings of the association has been extremely good, according to reports of the secretary. During the first six weeks that the organization was conducting meetings, the attendance averaged approximately 90 per cent of the full membership. Vital points have been touched upon by the speakers and as a result of the talks that have been presented a considerable amount of discussion has been brought up by the members.

One of the activities that the new association intends to enter is that of cooperating with the Department of Electricity in the city of Oakland. It is the intention of the association to confer with the department in order that the inspection rules may be standardized and thus eliminate considerable misunderstanding that has been experienced in the past.

One of the best known men affiliated with the Electrical Contractors and Dealers' Association of San Francisco is Arthur Elkin, secretary of the organization. Mr. Elkin has been active in the work of the association and during the state convention at Donner Lake he made many new friends among the contractors and dealers from other California cities. Mrs. Elkin accompanied Mr. Elkin to Donner Lake.

The officers of the association are: T. L. Rosenberg, Quality Electric Company, president; A. Weber, Paramount Electric Company, vice-president; W. D. Vance, Pacific Electric Motor Company, secretary; and W. E. Scott, Scott-Buttner Electric Company, treasurer. Several committees have been named by President Rosenberg, the chairmen of the principal ones being: Walter Spencer, Spencer Electric Company, executive committee; C. D. Bronson, California Electrical Construction Company, legislative committee; C. Gates, Roberts Manufacturing Company, membership committee. The list of members includes the following firms:

Advance Electric Company
Alex Anderson
Andrews Electric Company
F. A. Anderson
James Anderson
Blundon & Margie
Boynton & Reed
Bushman Electric Company
Century Electric Company
R. H. Conrad Electric Company
California Electrical Construction Company
E. M. Coffin
Cooperative Electric Company
Cooper Electric Company
Commercial Electric Company
Electric Equipment & Repair Company
Electric Motor & Machine Works
Electric Shop
Fruitvale Electric Company
Goss Electric Shop
Goff Electric Company
R. H. Green
Guarantee Electric Company
Hartman Electric Company
Hoxie & Meech
N. C. Hopkins
La Paugh Electric Company
Maxwell Hardware Company
Melrose Electric Shop
Monarch Electric Motor Company
Miller Electric Company
NePage McKenny Company
Newbery Electric Company
G. E. Ortman
Pacific Electric Motor Company
Paramount Electric Company
Quality Electric Motor Company
Roberts Manufacturing Company
Scott-Buttner Electric Company
Spencer Electric Company
Harry Stroll
Snott Electric Company
Strom Electric Company
Thomas J. Thompson
P. H. Wetzel
Wilson Electric Company.

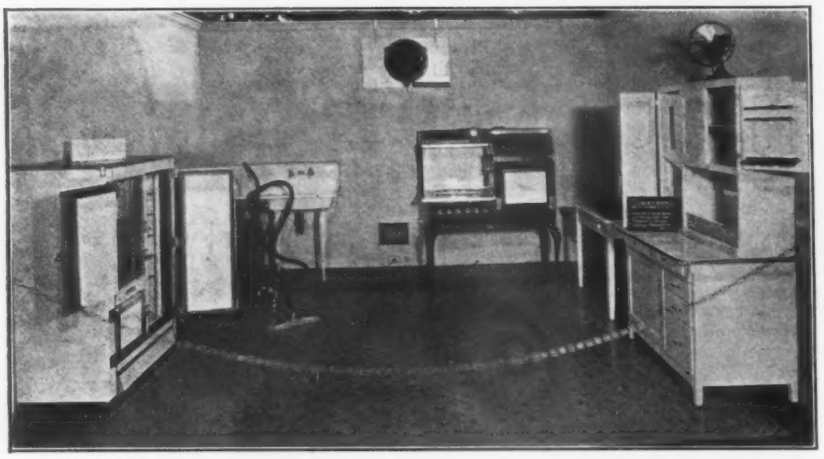
Electragists' President Urges Joining Associations

For the man in the electrical industry to get the most out of his business, he should have a membership in the local organization and also the national association of his branch of the industry, is the opinion of James R. Strong, president of the Association of Electragists International. Mr. Strong was the speaker of the day at the July 23 meeting of the San Francisco Electrical Development League.

In his talk Mr. Strong dealt principally with the advantages of associations and told of the activities of several of the electrical associations. He stated that vital business facts were being less jealously guarded at the present time and drew the conclusion that associations were partially responsible for this.

To make the retail appliance business a more remunerative one, the speaker advocated the calling in of national and local associations to solve the problem. He stated that in the first three months of the present year, eleven central station companies in the Middle West had found that in selling two million dollars' worth of merchandise they had had a net loss of 12 per cent.

JOBBER, DEALER AND SALES AGENT



The model electric kitchen arranged by the Denver Electrical Cooperative League. Note the small sign calling attention of the visitors to the convenience outlet on the back wall of the booth.

Denver League Aids in Presenting Homes Show

Sixty-five Thousand People Visit Better Homes Exposition that Featured the "Do It Electrically" Idea

One of the planks in the platform of the Electrical Cooperative League of Denver, Colo., is "the encouragement and co-ordination of electrical exhibits at various expositions." Development of this idea in connection with the Better Homes Show recently staged in that city under the auspices of a local newspaper, provided an opportunity, according to reports, second only to an electric home, in conveying the message of "Do It Electrically" to the public of Denver.

The exhibition proper was purely of an educational nature. It consisted of 26 model rooms, a garden, and a stage from which the lectures were delivered afternoon and evening. Surrounding this setting in the municipal auditorium were nearly a hundred booths of Denver business firms, through the efforts of which the cost of the show was underwritten. In these booths, in the boxes, and in the corridors, trade names and prices could be mentioned. Individual advertising and personal demonstration were also permitted.

According to the established practice of the American Homes Bureau with headquarters in Chicago, the organization staging the various shows throughout the country and providing the lecturers, the model rooms were not commercialized other than through small artistic signs indicating that a special service had been rendered by the individuals or firms mentioned.

When the Denver newspaper sponsoring the show first considered the undertaking, the Electrical Cooperative League was consulted relative to the electrical features to be developed. As a result, a minimum standard of wiring was established, considering the nature of the wall construction.

At least one convenience outlet was established in each room, and notably in the case of some of the model living rooms two and three outlets, some of them duplex, were installed. It was not possible to standardize this feature, according to reports, because of there being no hollow separating partitions between many of the rooms.

The same condition prevented the installation of the desired number of bracket lights. With no ceilings to the rooms, it was impossible to hang ceiling fixtures but the illumination did not suffer, it is said, because of the great number of portable lamps used in addition to the brackets. A channel reflector also was located overhead at the front of each room and from this source general illumination was provided.

In the case of convenience outlets, where visible to the eye, a sign was attached indicating the name and nature of the device. Special attention was called to the duplex receptacles. At various places conspicuous to the visitors but not in proximity to the outlets similar signs were employed, advising that every room in every home should have at least one convenience outlet.

Several of the model rooms were turned over to the League for arrange-

At the left may be seen the model living room displayed cooperatively by Denver merchants at the Better Homes Exposition. The Denver Gas & Electric Light Company's modern laundry room exhibit is shown in the illustration at the right.

ment, notably an electric kitchen, laundry, and radio room. The equipment required in these rooms was secured from the electrical firms maintaining exhibition booths. A large number of appliances were also placed in other rooms, following the scheme employed at the exhibition of the electrical home in Denver.

A special advertising section was issued the day before the show opened and over 300 in. of editorial matter on electrical subjects was used. The syndicate matter was passed upon by the League and a number of articles were also written by the League staff On the last night of the show, a talk was made by S. W. Bishop, executive manager of the Denver organization, on the application of electrical features, found at the show, in the homes of all visitors.

Attendance for the week totaled over sixty-five thousand and the only cost to the League for its participation was the time required of staff members, and the expense of a few signs.

Helping the Dealer to Properly Serve His Customers

To the electrical dealer, the help that has been furnished by the manufacturer, has always been of considerable value. Sales helps in the form of consumer pamphlets and other literature have been used to good advantage by dealers as have also suggestions concerning the management and operation of the individual store.

These helps have been in the form that concerns the making of the sale and have not always contained information that would permit the dealer to entirely satisfy his customers after the sale has been made. Many electrical devices, particularly those that are in use by industrial and commercial firms, need more or less servicing. To do this efficiently the dealer must be in a position to know exactly what parts of any device will probably need the first attention. This information can be given to the customer and permit him to service his own equipment, or the dealer may be called upon to do the servicing for the customer.

As an aid to its dealers, the Reynolds Electric Company, Chicago, Ill., manufacturer of small motors and motor driven appliances, has recently published in its dealer publication the following suggestions concerning the servicing of electric flashers:

KEEPING THE FLASHER IN PERFECT WORKING ORDER

Perhaps the most neglected part of an electric sign is the flasher—yet it is a very easy matter to keep the flasher up to full efficiency.

Nothing presents a more untidy appearance, than a ragged flashing effect. Take for instance a running border which has a perfect traveling or running effect when first installed, and after a while flashes back and forth or with only half the lamps burning. This shows that the brushes on the flasher have burned off to the extent where they no longer touch the contacts; an easy matter to correct.

A sign which flashes a word letter after letter, then goes out and comes on as one and goes out and repeats, will, if neglected, show ragged flashing, causing letters to come on and go out in haphazard fashion. This is also an indication that the brushes have not been reset.

It is utterly impossible to control even burning or wearing of the brushes and contacts on account of current conditions; therefore periodic inspection of the flasher should be made and the brushes should be reset or moved up to make up for the burning.

On speed flashers, a brush makes and breaks in some cases 360 times per minute, 21,600 times per hour, 172,800 times per 8-hr. night. In a word, flasher work is the hardest known duty in contacting work, and it is only natural that the brushes and contacts burn and consequently grow shorter.

The contacts should be kept smooth by use of sandpaper or filing.

The brushes should be moved up only enough to make up for burning. Maintenance men sometimes think they are saving themselves work by pushing the brushes in so far that they almost touch the flasher drum. This causes undue strain on the brushes and they will break within a short time and moreover the effect is as a rule ruined.

The flasher bearings should be oiled with light engine oil and the motor grease cups should be filled with soft cup grease.

The connections to the flasher should be examined now and then, as they sometimes work loose which causes overheating and excessive burning.

Grounds in a sign are frequent especially after a rain, and causes an unusual amount of current to flow through the brushes with consequent burning. This condition corrects itself with weather conditions, but in the interim the flasher requires more frequent attention.

If the flashing effect is too fast or too slow, the speed of the flasher can easily be changed by putting on a different size of drive pulley.

A few spare parts, such as extra brushes and contacts, should be carried on hand by the user or by the maintenance company to save time and expense.

The accessibility of the flasher is imperative. The flasher should be installed in a place where it is convenient to work on. Otherwise it is bound to be neglected.

The life of brushes depends entirely upon the load carried and the number of makes and breaks per minute. The brush on a high speed flasher if properly maintained will last from one to two years provided it is carrying a load equivalent to the rated capacity, while the brush which makes and breaks only several times per minute will in turn last three to four years and longer.

The life of the contact also depends upon the service and the amount of attention the flasher receives.

The brushes and contacts are virtually the only wearing parts on a flasher, and if attended to regularly will last a long time. The balance of the mechanism is built up of oversized parts and requires but little attention other than occasional oiling and cleaning.

Getting a Classified List of Appliance Prospects

Seven Thousand Five Hundred Persons Give Names and Choice of Appliances to Alhambra, Calif., Firm

If you were the manager of a contractor-dealer establishment in a town of fourteen thousand people, what would you give for the information that would tell you in what major appliance seven thousand five hundred of them were most interested? Undoubtedly, you would be willing to appropriate a considerable sum to obtain this information and when in securing this you could at the same time determine just which appliance Mrs. Jones and Mrs. Brown each needed the most, you would admit that any reasonable expense would be justified.

Such a list as is suggested above is extremely hard to secure, but if it can be obtained, the store manager will find that it is of inestimable value to him. What better prospect list could be arranged for salesmen than one which was based on actual statements, announcing that all of the prospects on the list had expressed that they wanted an electric range more than they wanted any other electric appliance?

To secure the information as to what appliance the housewife needs and desires the most by means of solicitors going from door to door, or to attempt to obtain it by means of letters mailed to the housewives of the town, would be extremely expensive and unfruitful.

The S. & H. Service Electric Company, Incorporated, of Alhambra, Calif., recently had reason to desire such a list of prospects and it wished to secure this list without a great deal of expense. The manager of the firm realized that the securing of the desired information would entail some expense and he was willing to stand this if the information could be accepted as authentic and correct.

The Alhambra Business Men's Association Carnival had been planned for the city of Alhambra, and it was decided to capitalize on this fair. The company planned to have a display at the fair grounds regardless of any special campaign, so it was determined that from this booth an effort would be made to secure a reliable prospect list which would, in addition to giving the names of the visitors, show in what particular appliance they were interested. When

S. & H. Service Electric Company, INC.

GUESS AND WIN $60.00 IN TRADE

Name _____ Phone _____

Address _____

Amount Guessed _____

Winner will receive $60.00 in trade on any of the following items. Check the one you prefer.

ELECTRIC WASHER		ELECTRIC RANGE	
ELECTRIC CLEANER		ELECTRIC IRONER	
ELECTRIC SEWING MACHINE		ELECTRIC DISH WASHER	

Reproduction of the card upon which guesses were entered. From these cards the firm obtained a classified list of prospects who had indicated their preference for one of the six appliances.

it had been decided to do this, the problem confronting the company was how to obtain the answers to the questions that the company wanted to ask, without offending the prospect.

The old-fashioned guessing-contest was finally found to have characteristics which made it suitable to the company's needs. It was planned to have a covered glass mayonnaise bowl placed at the front of the booth, in which a quantity of rice could be kept. An electrically driven cream whipper was to keep the grains of rice moving about in the bowl and it was the intention to have the visitors at the fair guess how many grains of rice there were in the bowl.

The novelty of the contest as far as the public was concerned was in the fact that the grains of rice were kept in motion by the electric whipper. As regards the electrical industry the novelty of the campaign was in connection with the cards which were used to record the guesses of the visitors. These cards, which were specially printed for the S. & H. Service Electric Company, Inc., contained space for the guesser's name, address and telephone number and the number of grains that the person guessed were in the bowl. In addition to this, a list of six major appliances appeared in tabular form on the card. The guesser was to place a check mark opposite the appliance that he or she preferred. In this way the company hoped to secure the names of the visitors and also to determine which appliance each desired the most.

When the fair was opened the company had its booth attractively decorated and inside displayed, in prominent places, the six appliances the names of which appeared upon the card. A sufficient number of convenience outlets had been provided in the booth to permit the attendant to operate all of the appliances at the same time, should he care to do this. By the use of these outlets the company was able to demonstrate the appliances and at the same time show the value of these outlets to the housewife. Smaller appliances such as toasters, waffle irons, percolators, irons, fans, etc., were placed on elevated stands arranged along the side and back walls of the booth. Lighting fixtures were hung from the ceiling and a floor lamp was placed near the front of the booth. A quantity of literature was kept within reach of the attendant.

It was not necessary to urge visitors to the booth to participate in the guessing contest as it was free and for that reason provided its own drawing card. In arranging the contest the company offered to give the winner $60 in trade on any of the six appliances that were listed on the card. By this arrangement the company would be paying $60 plus the cost of the cards and of tabulating the results, for the list which would show the names and preference of each guesser.

Interest, even exceeding anything that the company officials had expected, was displayed in the contest. Nearly every visitor who stopped in front of the booth took one of the cards and entered a guess as to the number of grains of rice in the mayonnaise bowl. When it came to filling out the lower portion of the card, it was evident that every guesser needed some appliance and in many cases members of a family, one of whom had entered a guess, would argue at some length as to which appliance they needed the most.

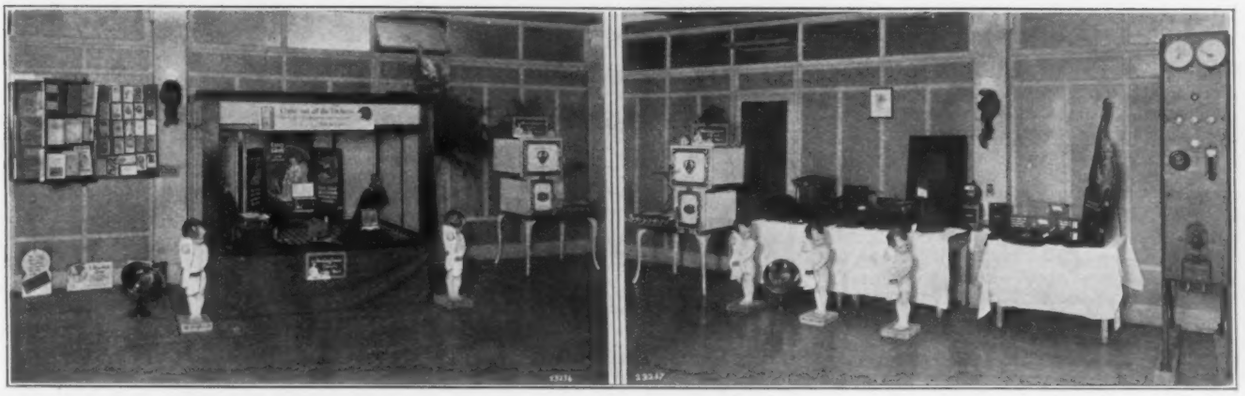
When the fair had ended, gate reports showed that about fifty thousand people had attended the exhibits presented there. The count of the guesses received by the S. & H. Service Electric Company, Inc., came to approximately seven thousand five hundred. The winner was given credit amounting to $60 on the appliance she chose and the company had an excellent prospect list that it could follow-up at any time it chose to do so.

In examining the cards that were returned it was found that a great number of the people who entered the contest were from out of the city, and so it was decided to offer additional prizes to the fifty persons having the next fifty most nearly correct answers. Most of these people were not residents of Alhambra and letters were written to them notifying them of the fact that the company had decided to make the additional awards. The awards in these cases were $8 in trade on any of the major appliances that the company handled. In the letters that were sent out, attention was called to the complete line of appliances carried by the Alhambra firm and the winners were urged to call and get their appliances at an early date. A time limit was attached to the offer. As a result of sending these fifty letters the company completed the sale of thirty-five major appliances and in addition secured the good-will of everyone who made a guess at the company's booth.

The discount that was offered the winners was one which the dealer could afford to offer and yet it stimulated the interest of the winners in electrical appliances. The manager of the firm felt that the extra $280 that was given in letters of credit to the thirty-five winners who accepted the offer, was money well spent in securing the good-will of the community.

In Alhambra itself, the concern used the list that had been secured as a prospect list as one on which vacuum cleaner and washing machine salesmen could work. These men first called on those persons who had intimated that they were most interested in vacuum cleaners and then later called on those who noted that they preferred to own an electric washing machine. The lists proved to be of excellent character and sales records show that the idea was one which could be followed by other dealers with exceptional results.

The booth of the S. & H. Service Electric Company, Inc., at the Alhambra Business Men's Association Carnival, showing the bowl of rice that was the center of the guessing contest and the various appliances that were featured at the booth. Notice the abundance of convenience outlets.



The miniature window display at the left and the display of equipment at the right appeared at either side of the speakers' table at the meeting of the Seattle Advertising Club that was turned over to the local office of the Westinghouse Electric & Manufacturing Company.

Cooperating With the Northwest Advertising Clubs

Electrical Message Is Presented to the Clubs of Seattle and Spokane by Representatives of Manufacturers

To the electrical industry, the advertising clubs that are located in the principal cities of the West, offer a very suitable opportunity to present the "Electrify" story. These organizations are willing to turn their meetings over to reputable concerns that will present programs which show what is being done to increase the sale of any product through the use of advertising.

In the early part of this year the Seattle office of the Westinghouse Electric & Manufacturing Company secured permission from the Seattle Advertising Club to take charge of one of the weekly meetings of that body. In preparation for the meeting, the Westinghouse representative in Seattle had the tables arranged to form a large "W" and to add color to the dining room, flowers were placed on each table.

In addition to this a comprehensive display of the smaller products manufactured by the company, was also presented. This display was divided into two parts. At the left of the speakers' table a miniature window display was placed. Near this the consumer literature of the company was arranged on a display rack. Cards that are ordinarily used in window dressing were placed in the miniature window and at either side of it. White enameled ranges were placed at either side of the speakers' table, in plain view of the club members.

A display of the smaller industrial equipment manufactured by the company was located at the right of the speakers' table. There small motors, transformers, switches, meters and lamps were presented in an attractive manner. A panel-board was also shown.

During the meeting a lecturer from the Westinghouse company demonstrated how waffles should be baked on an electric waffle iron. This attracted considerable interest as did the drawing for the five waffle irons that were given away to the members of the Advertising Club. The Westinghouse company also presented the club members with pocket diaries.

Speakers for the day carried out the electrical idea. J. G. Miles, manager of the central station department of the Seattle office of the Westinghouse company, spoke on "The Power of the Name Westinghouse," and pointed out the advantages possessed by Seattle in having a sales and manufacturing office in the city. E. G. Patterson, of the service department, discussed "Local Manufacturing" and R. W. Buckles, Seattle manager of the lamp division, told of the activities of his department. "Merchandising Avenues of Distribution" were discussed by E. V. Peterson, merchandising manager of the Seattle office.

Another example of cooperation with the local advertising club was recently enacted at Spokane. At the annual "Animated Ad Club Ball" the Eureka Vacuum Cleaner Company had two different "forms of advertising" present. Two little girls especially proficient in fancy dancing were dressed as "Princess Eureka" and "Prince Thor." These little girls mingled with the other animated advertisements and attracted considerable attention. During an intermission they presented a special dance number. "Princess Eureka" was impersonated by Dorothy Jean Logan, daughter of Eugene Logan, civil engineer of the Washington Water Power Company, and Elizabeth Bryan took the part of "Prince Thor." The children received honorable mention at the ball and according to R. B. Carter, Northwest district manager of the Eureka Vacuum Cleaner Company, the advertising has been very effective as far as the Eureka cleaners were concerned.

At the function, J. B. Tubergan, Pacific Coast representative of the Eureka company, with offices at San Francisco, appeared in costume as "Doctor Eureka." Mr. Tubergan carried the conventional doctor's bag on the outside of which appeared a sign reading, "Doctor Eureka, Germ Specialist, Washington Water Power Company."

During the evening the "Doctor" passed out prescription blanks to the dancers. These blanks directed "Mrs. A. Cleanhouse" to purchase a Eureka vacuum cleaner in order to lessen her housework. The blank stated that the "Doctor's" office was in the Washington Water Power Company building. The prescription entitled the holder to the free loan of a cleaner. The stunt attracted considerable attention and the Washington Water Power Company, retailer of the line in Spokane, reported that an increase in sales had been noted following the ball.

Doctor Eureka

OFFICE AT

Washington Water Power Co.

TELEPHONE: MAIN 5171 HOURS: 8 A. M. TO 6 P. M. WEEK DAYS

PATIENT'S NAME *Mrs. A. Cleanhouse* ADDRESS *Any Place*

℞ *One Grand Prize Eureka Vacuum Cleaner*
to Protect Your Health
to Remove all Dust and Germs
to Increase Home Sanitation
to Eliminate Drudgery
to Save Your Strength
to Stop that "Tired-out Feeling
to Make Spring Housecleaning Unnecessary.

Use as Needed
DOCTOR EUREKA

PRESENT THIS SLIP FOR FREE LOAN OF EUREKA VACUUM CLEANER

This "prescription" was presented to the women who attended the "Animated Ad Club Ball" of the Spokane Advertising Club. "Doctor Eureka" estimated that every woman was a prospective patient.

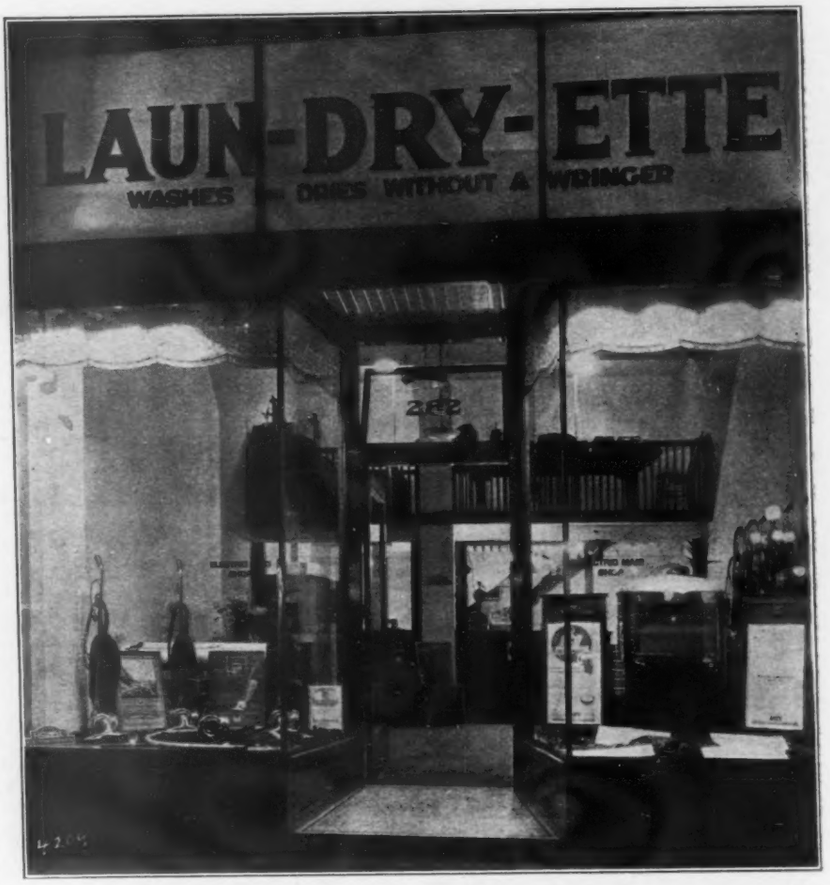
The Electrical Dealer Locates in the Shopping Center

A good location, no matter how small the store itself may be, is a distinct advantage to any electrical establishment. This fact has been proven many times to the appliance and fixture dealer in the larger city. In the case of the dealer who handles washing machines and vacuum cleaners it has been felt that the location is not of such great importance as most of the sales that have been made are the result of house-to-house canvasses.

The Electric Maid Shop of Portland, Ore., has recently proved that a good location is also a decided asset to this class of establishment. This store is located in the center of the retail shopping district of Portland and as a result its window displays are constantly before the eyes of the women buyers of the city. The windows are decorated in good taste all of the time, but no attempt is made to present flashy displays. It has been the experience of the manager of the store, that an excellent list of prospects is obtainable from the pedestrians, who, seeing the display will become interested enough to come into the store to inquire concerning the appliances shown in the window.

The location of the store has no doubt a great deal to do with the value of the show windows, for if women shoppers were not constantly passing the establishment it would not be possible for the company to obtain any sort of prospect list from the people who passed the store. As it is, a class of women well able to purchase electric washers and vacuum cleaners, is passing on the sidewalk in front of the shop nearly all day long and by presenting forceful window displays the management is able to attract these women into the store. Once they have entered the door they are marked as excellent prospects, for they have shown an interest in the devices or they would not come inside. A salesman can readily secure the name of the woman and can arrange to have a demonstrator call at her home, that she may see for herself how the washing machine or cleaner would do her work for her in the easiest way.

George A. Kumler, manager and owner of the Electric Maid Shop, has added to the pulling power of his windows by having demonstrators present in them during the hours that the pedestrian traffic is heaviest. He has found as many other progressive dealers have, that a moving display has a much greater power to attract attention than has one which is stationary. It is the unusual in displays that attracts the attention and with a little thought, the demonstrator can prepare a set of trials that vary from the customary ones that have been shown to the public for some time.



The display windows of the Electric Maid Shop in Portland, Ore. The owner of the store has been able to secure the names of many prospects because his establishment is located on a busy street.

THE SILENT SALESMAN GIVEN DUE CREDIT

By JOE OSIER

I'll admit, without waiting for positive proof to be presented, that—

Anyone, no matter how heavy he is above the ears, can—

Complain, find fault and criticise; and, after making this admission,—even acknowledging that I carry excess weight above my collar button—

I intend to join the mob of moaners and aim my darts and arrows at the Boys in the electrical contracting-dealing and jobbing game who—

Fail to take advantage of the services of the Silent Salesman and—

When I say Silent Salesman, I mean that Buddy who is on the job 24 hours a day—who works rain or shine—who never complains about the heat or the cold and who is never late—

The hardworking Hombre who never tries to beat the clock—who never complains about overtime and who is never troubled with flatfleet or bunions;—

Who is never grouchy, gloomy nor troubled with indigestion; who—

Was never known to strike for a raise or demand his cut of the earnings.

Some folks call this paragon "Ol' Ace in the Hole" while others refer to him as "Eggs in the Coffee" but I—

Being of an old-fashioned turn of mind, prefer to call him the Silent Salesman or John Window Display and—

Now that I have exposed my hole card, let me ask you,—business man to businessman—

Is this Silent Salesman on your payroll?

Is he out in front of your shop, greeting the eye, gladdening the heart and quickening the pulse of the passing public?

Is he flagging them down; is he arresting their attention; is he drawing them into the shop—giving you the opportunity to—

Strut your stuff?

If he is, allow me to extend the congratulatory hand. If he is not, you must share in the blast of disapproval—

Which I dedicate to the nearsighted electrical jobber-dealer who cannot see beyond the end of the counter.

The Silent Salesman's name is Legion. There are millions of him and he can be found, searching for employment, in every hamlet, town and city the world over.

He is always looking for work and, when a position is found, he has never been known to quit.

Any shopowner can afford to hire him because his salary is paid in time, stock on hand and a few artistic touches and—

His worth cannot be overestimated.

Men of the Trade who have accepted his services swear by him and—

By the same token, Men of the Trade who have not—

Swear at him—but—

Regardless of the invectives of the latter, he keeps up the good work and the shop or store wherein he labors, prospers and the owner smokes cigars made of tobacco and—

The register is bulging with bullion.

And now I am prepared to take the stand and eternally vow that what I have written is the truth—the whole truth—so help me—

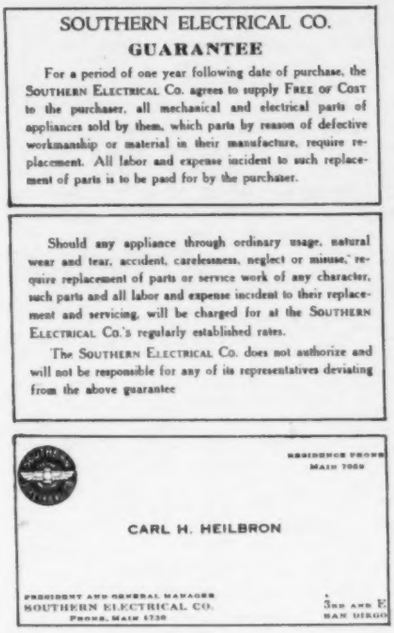
To write another column.

Make a Favorable First Impression on Prospects

San Diego Firm Provides Representatives with Unique Cards that Introduce Salesmen and Advertise Merchandise

Just as the unusual thing presented in the circus attracts attention, so does it in the sales campaign of the electrical dealer. It is the aim of the window decorator to present something which will attract attention and to do this he employs either an unusual arrangement of merchandise or obtains the unusual display by presenting goods that are of an unusual design. The things that are seen by people every day will not have the attention getting value that new devices will have unless a definite effort is made to make some unusual presentation.

In keeping with the present tendency to give every store a personality is the policy of providing salesmen with cards bearing the name of the firm and the


SOUTHERN ELECTRICAL CO.

GUARANTEE

For a period of one year following date of purchase, the SOUTHERN ELECTRICAL CO. agrees to supply FREE OF COST to the purchaser, all mechanical and electrical parts of appliances sold by them, which parts by reason of defective workmanship or material in their manufacture, require replacement. All labor and expense incident to such replacement of parts is to be paid for by the purchaser.

Should any appliance through ordinary usage, natural wear and tear, accident, carelessness, neglect or misuse, require replacement of parts or service work of any character, such parts and all labor and expense incident to their replacement and servicing, will be charged for at the SOUTHERN ELECTRICAL CO.'s regularly established rates.

The SOUTHERN ELECTRICAL CO. does not authorize and will not be responsible for any of its representatives deviating from the above guarantee

RESIDENCE PHONE MAIN 7089

CARL H. HEILBRON

PRESIDENT AND GENERAL MANAGER
SOUTHERN ELECTRICAL CO.
PHONE, MAIN 4730

3RD AND E
SAN DIEGO

The card used by representatives of the Southern Electrical Company is shown here unfolded. Black lines have been drawn on the card to indicate the three divisions. In presenting the card the upper two-thirds are folded under the lower portion.

name of the salesman. This has been done by almost every firm which employs men who call upon clients and it is not unusual to have the business caller present a well designed card which may be engraved in several colors. The purpose of these business cards is to provide some means by which the caller may identify himself and his firm. A name engraved on a card will impress itself much more forcefully upon the mind of the person being interviewed, than will one given only in an oral way. It is also much easier to remember something that has been seen than it is to remember a name that has only been heard.

Since the purpose of the card is to identify the person who presents it, many firms have endeavored to prepare cards for their representatives which would be distinctive and which would attract attention. If the attention of the client can be caught for a short time with the card there is a good chance that the firm name will be impressed on his mind and that he will remember it. In building personality for an establishment it is important that the name of the firm be presented to the prospective customer in such a way that he will not forget it easily. In the last analysis the store with what is called a personality, is the one with which the customers feel that they are actually acquainted. If a customer knows the salesmen of the company that he transacts business with by name, he feels that the institution has a personality and that it is a living thing. The salesman is the representative of the organization and if he is known personally the customer is very likely to attach the personality of the salesman to the company and as a result will feel that he is receiving the personal attention of the concern that the salesman represents.

If the salesman can be introduced in such a way that he is immediately given a personality, and is not just a salesman, part of the barrier to securing an order is broken down immediately. In some cases the ordinary business card will be sufficient to introduce the salesman, but in others a card which has some distinctive design will create a more favorable first impression on the prospect. The unusual card will in all cases develop an impression which will be more lasting.

The Southern Electrical Company, a contractor-dealer firm of San Diego, Calif., has been a consistent user of distinctive sales campaigns in the southern California city and has as a result built for itself a very good name. This company has presented many unique ideas during these campaigns and has found that the results have been well worth the money spent for advertising and publicity. In an endeavor to give the establishment a personality the company has provided every one of its employees, from president to office boy, with a specially designed business card.

This card which is printed in only one color is the same for each employee, but carries the name and position of the individual who presents it. It is prepared to provide the employees of the company with a means for identifying themselves and the company and to serve as a piece of direct advertising. The face of the card as it is presented is the size of the regular business card and has no unusual appearance. On receiving the card, the man to whom it is presented finds that the face of the card is only one-third of the size and that the card unfolds from the rear, presenting a card 3½ in. by 5⅜ in. The natural instinct of anyone receiving the card is to read the matter which is presented to him in this way. In the case of the cards used by the Southern Electrical Company, the guarantee given by the company on appliances sold, is printed here. On the reverse side of the card an advertisement is printed which gives the names of the electrical devices handled by the company. A statement concerning the service given by the company is also made part of the advertisement.

The card, because of its novel design, has attracted much favorable comment in San Diego and has no doubt been a factor in establishing the name of the Southern Electrical Company in the minds of the residents of the city. The costs of printing cards similar to the one used by the concern are not much higher than those for obtaining cards of the ordinary variety, but the benefit that can be derived from them has been found to be considerably greater. Because of the convenient size to which the card folds, it is both easy to carry and to present to customers and because of the novel form it catches the eye of the person immediately. The originality that is expressed in the card demands attention and the average man will not throw the card in the waste

Reverse side of card which is not displayed until the card is opened by the person that receives it.

basket immediately and forget the name of the firm while so doing. The names of the company and its representative are put in such conspicuous places that neither will be missed even if the person looks at the card for only a short period.

IT'S THE MIDNIGHT MAZDA NOW

By C. E. HOWARD

Ye poet in ye olden day
Poeted most at night;
He labored o'er his little lay
By a most atrocious light.

The hapless bard must strain his sight
By the coal-oil lamp of fishy smell,
Smoky chimney and none too bright—
I wonder now that he did so well.

He wrote of roses and the moon,
The milkmaid and the son of toil,
Love in a cottage, the bride of June—
Oh, how he burned the midnight oil!

But the passing years have brought him gain:
The poet now his verse doth write
(Thanks to the inventor's wondrous brain)
By the midnight Mazda's brilliant light!

INDUSTRIAL NEWS

First Contract Let by Moffat Tunnel Commissioners

A contract for furnishing electric power for boring the Moffat Tunnel has been awarded to the Colorado Power Company of Denver, Colo., by the Moffat Tunnel Commission. The company, at its own expense, is to erect approximately twenty miles of high tension line to each portal of the tunnel. The line will cost approximately sixty thousand dollars. The commission will advance the cost of the line and the power company will return this at the rate of 20 per cent each month for five months. Work on the transmission line has started.

The power line will be connected with the Boulder, Shoshone and Idaho Falls stations of the power company so that uninterrupted service will be supplied to the tunnel crews. The line will start from the Boulder Canyon station and will go over Magnolia Hill to the eastern portal and thence over the range to the western opening. Engineers have estimated that it will take three months to complete the construction of the line.

This is the first contract that has been let in connection with the driving of the tunnel. Contract for the driving of the first tunnel is to be let within the next two weeks, according to reports from the Moffat Tunnel Commission. Specifications will be ready for inspection Aug. 1 and will be opened about Aug. 15.

R. H. Keays, of Allaben, N. Y., has been named as chief engineer in charge of the tunnel work. Mr. Keays has had a wide experience in tunnel construction and is well suited for the position. Major L. D. Blauvelt, former chief engineer for the Tunnel Commission, has been named as a member of the consulting board of engineers.

Transmission Line to Be Built in Central California

Seventy-five miles of 60,000-volt transmission line will be built by the Western States Gas & Electric Company between Stockton and Camino, Calif. Conditions require that the line be completed in five months.

The line will be built on the right-of-way of the existing line and because of this, construction will be confined to one section at a time. The present power loop will be cut out and a section of the present line torn down and a new section installed. As each section is completed it will be tied into the transmission system and another section torn down. During construction secondary distribution lines will be kept in service at all times and temporary switches will be installed in the high tension line to prevent the necessity of keeping too long a section out at one time.

Flat construction will be used on the line on account of the greater clearance provided by this type. Conductors will be No. 00 stranded copper wire. Pin type insulators are specified with dead ends at turns. A copper telephone wire will be strung on the same poles. Coordinate transposition will be employed to guard against inductive interference. Power conductors will be transposed every two miles and the telephone wires every half mile.

Poles for the line will be spaced 350 ft. apart in the lower stretches where 45-ft. poles will be used. In the mountainous stretches of the line 40-ft. poles will be spaced 300 ft. apart. An effort will be made to relocate a portion of the line between Diamond Springs and Ashville. The territory is so rough there that it is extremely difficult to transport material to the present right-of-way.

The line construction will be under the supervision of E. N. D'Oyly, superintendent of electric distribution. A. L. Board, assistant superintendent of electric distribution, will be directly in charge of the work.

General Electric Company Will Erect Plant in Seattle

Negotiations are under way and a deal is expected to be consummated shortly insuring the construction of a large service and distributing shop and plant in Seattle, Wash., by the General Electric Company. The plan, according to announcements made recently, presages the ultimate investment by the General Electric Company of $1,000,000. The initial expenditure has not been made public.

The site to be purchased covers a block of industrial property on Fourth Avenue South, near the present plant of the Vulcan Manufacturing Company. Details regarding the size of the plant to be built have not been released for publication but, unofficially, it is stated several hundred workmen will be employed.

Speaking of the proposed project, H. E. Plank, manager for the company in Seattle, said: "Our plans are not advanced sufficiently to make a detailed announcement. The General Electric Company expects to build a large service plant or shop where repairs for any kind of electrical machinery may be made. No manufacturing is contemplated in the beginning, but eventually the company expects the demand to become such that manufacturing will be necessary. The shop will be complete with high grade equipment. Further announcement would be premature at this time."

To Complete Interconnection of Systems in Northwest

To provide the last link of the interconnected power transmission system between Billings, Mont., and Seattle, Wash., the Washington Water Power Company of Spokane, will, in the near future, start construction on a 110,000-volt transmission line between Wallace and Burke, Idaho. The line will be 7 miles long and is to be completed late next fall.

The tie line will link the lines of the Washington Water Power Company and those of the Montana Power Company, thus making the interconnected system across the northern border of the states of Montana, Idaho and Washington six hundred and fifty miles long, measuring as the crow flies. When the line is completed the connection will be by the Montana Power Company, the Chicago, Milwaukee & St. Paul Railway, Washington Water Power Company and the Puget Sound Power & Light Company.

Surveying for the new line has been started and the route to be followed will be from the Montana Power Company substation east from Burke, to the 60,000-volt line of the Washington Water Power Company at Wallace. An out-door substation will be built at Wallace. Suspension type insulators will be used to carry the three transmission line wires. Construction crews will start setting poles late in August.

California Public Works Board Issues Power Permits

The Department of Public Works of the State of California has recently issued to Edward Fletcher of San Diego, Calif., a permit to appropriate 50 sec.-ft. of water from Boulder Creek in San Diego County. The water is to be used for developing 9,222 hp. Mr. Fletcher estimates the cost of the development at $390,000.

The Department has also issued a permit to the South San Joaquin Irrigation District to appropriate 950 sec.-ft. from the Stanislaus River in Calaveras and Tuolumne Counties. The District, which has its offices at Manteca, proposes to develop 7,557 hp. at an estimated cost of $3,000,000.

The Mokelumne River Power & Water Company of San Mateo has made application for a permit to make use of a total of 80,000 acre-feet per year from the south and middle forks of the Mokelumne River and the north fork of the Calaveras River. The water is to be used for irrigation purposes and 16 miles of main canal are proposed. The estimated cost is $1,200,000.

Merced Irrigation District Is Given Project License

A license for 50 years covering a power project on the Merced River, near Merced, Calif., has been granted to the Merced Irrigation District by the Federal Power Commission. The project consists of a reservoir with 281,000 acre-feet capacity, a concrete dam 320 ft. high, a pressure tunnel 1,800 ft. long, and a power house which will operate under a maximum head of 320 ft. and an average head of 250 ft. The installed capacity of the plant is to be 25,000 kw.

The dam and reservoir will be constructed primarily for irrigation and storage, the water being released through the power plant and re-diverted 8 miles downstream. A system of canals will carry the water to the 200,000 acres included in the irrigation district. The construction of the reservoir will necessitate the relocation of 17½ miles of the Yosemite Valley Railroad at a cost of about $2,500,000.

The district has entered into a 20-year contract to sell practically all of the power to the San Joaquin Light & Power Corporation, reserving only the small amount needed at the plant and storage works. The total investment is estimated to be $13,478,000.

One Day Convention Is Held by Denver Electragists

Proper estimating including the exact knowledge of overhead costs and the results of the Eidlitz plan as now being developed in Greater New York, were the chief subjects of the one-day convention of the mountain division of the Association of Electragists, International, in Denver, Colo., July 16. James R. Strong, president of the national organization, Laurence W. Davis, director of promotion and development and A. P. Peterson, western field representative, who are making a tour of the United States, were present at the meeting.

The meetings, all of which were held at the Albany Hotel, started with a noonday luncheon, followed by the afternoon convention session with Mr. Strong presiding. The opening paper, "Organization," prepared by John F. Greenawalt, publicity manager of the Mountain States Telephone & Telegraph Company, was presented by his assistant, Joseph E. Moorhead.

The Manual of Estimating issued by the national association was the basis of the address given by Mr. Davis, his subject being "Estimating and Selling the Job." Large photostat copies of estimating sheets, used with the manual, aided in the presentation of the subject as did comprehensive charts on overhead costs, according to reports from Denver. Mr. Peterson made his first official visit to Denver at the convention and spoke of the recent residence wiring survey conducted under his direction at Minneapolis and St. Paul.

At the dinner in the evening, President Strong laid special emphasis on what the association has done, is now doing, and what it plans to do in the future. He strongly advocated closer cooperation among local contractors and urged their support of the Denver Electrical Cooperative League. He said that the benefits to be derived from an association are directly proportionate to the amount of time and study devoted by the members to the educational data supplied by the association. He urged the members to be first electragists and second to give at least five hours a week to the study of their own particular business.

E. C. Headrick, former president of the Denver Contractor-Dealers' Association and past chairman of the Electrical Cooperative League in that city, presided at the evening dinner, as the

Laurence W. Davis and James R. Strong

mountain division representative on the national executive committee of the Association of Electragists International. Alex Hibbard, secretary of the Denver Contractors' Association, Inc., and also of the state association, made all arrangements for the convention which had a maximum attendance of 80. Henry Tewksbury was in charge of registration. A reception committee consisting of John Hancock, Clark Rider, and D. D. Sturgeon also functioned. A large representation from the manufacturers, jobbers, and central station in Denver attended the meetings.

One hundred and seven Simplex cabinet type electric ranges are to be installed in the Huntington Apartments now being erected in San Francisco at California and Taylor Streets. Each will have a capacity of 7.7 kw. The installation was sold by "Doc" Libbey, western sales representative of the Simplex Electric Heating Company. The Huntington Apartments will be the largest apartment house building in San Francisco.

Installation of the largest radio station on the Pacific Coast will be made either at Aberdeen, Wash., or at Hoquiam within the next four months, according to Antone Aberdeen, Seattle radio engineer. This radio station is to be the Pacific Coast terminal of the Alaska Communication Company, a newly organized commercial radio concern.

Intensive Street Lighting Plan Started by San Diego

Street lighting, with an accent placed upon the word "lighting," is in a fair way to being considered seriously by the City of San Diego, Calif. With several street lighting projects under construction and several more in petition, electrical men of that city look forward to an era of well lighted thoroughfares in the near future.

Contract was recently awarded and work begun on a system of ornamental street lights for La Jolla, a suburban district within the city limits of San Diego. One hundred and twenty new street lights fitted with 400-cp. lamps will be installed there. The standards are to be of concrete with Novalux fixtures. Lights contracted for will run down Prospect, Wall, Girard and Exchange Places, the latter to the golf links. Other sections of the community are lining up for similar lighting.

Work has also started on the installation of fifty-eight 600-cp. single lamps on Broadway, in San Diego, between Eighth and Sixteenth Streets, mounted on 15-ft. concrete poles. Impressed with the type of light standard, the district adjacent, that between Sixteenth and Twenty-fifth on Broadway, is actively signing petitions for similar lighting.

B and C Streets, from Seventh to Twelfth Streets in San Diego, are to have a street lighting system calling for 164 posts, with the same type standard and lamp. Petitions for the latter have been approved by the city council.

As an experiment in better street illumination, a limited district, comprising the block between E and F Streets on Sixth Street, in front of the Electric Building, and extending on F Street in front of the Maryland Hotel, will be lighted with two light standards of 24-ft. light centers, each light to be of 600 cp. This experiment is expected to bring forth the desire of adjacent streets for better illumination.

Claiming that it will be the best lighted residential district in the state, Burlingame, a residential section of San Diego, is planning on an unique lighting system. This district plans to have installed 45 light standards, 16 ft. in height, each of 600-cp., so as to light up not only the fronts of all residences in the district but its back yards as well. Simplicity in the design of the lamp standard will be sought as well as maximum of light, so that the system will at once provide an ornamental and yet a practical lighting district.

The Colorado Public Utilities Commission is now considering the application of the Oak Creek Service Company for permission to raise its rates for electric service. On account of the objections received from residents of the community, a public hearing was held early in July. This is the first case of a utility asking for an increase since the petition of the Colorado Power Company was denied nearly a year ago.

The Federal Power Commission has granted a fifty-year license to the Idaho Power Company, covering the company's transmission and distribution system, consisting of twenty-nine transmission lines throughout the Snake River basin in southern Idaho and Oregon, aggregating 420 miles in length.

P. G. & E. Announces Changes in Commercial Department

Several changes in the personnel of the commercial and public relations departments of the Pacific Gas & Electric Company have been announced as a result of the combining of the duties of the vice-president in charge of public relations with those of the vice-president in charge of sales. R. E. Fisher, who formerly held the latter position, now performs the duties of both offices.

The sales department will be under the supervision of a sales manager who will have general control of all matters relating to the sale of electric energy

DON C. RAY

and appliances, gas and appliances, water within municipal boundaries, steam and all other sales. H. M. Crawford will fill the position of sales manager. Under him will be H. E. Sandoval as manager of electric sales and F. U. Naylor as manager of gas sales.

The position of manager of the commercial department will be filled by N. R. Sutherland. His duties will deal with the interpretation of rate schedules and regulations, adjustments of disputes and the preparation of contracts and contract renewals.

J. Charles Jordan will hold the position of manager of the publicity department while R. W. Robinson will be assistant to the vice-president in charge of public relations and sales.

The newly created position of manager of the department of public relations will be filled by Don C. Ray, former manager of electric sales. Mr. Ray's connection with the electrical industry started shortly after 1896 when he was graduated from Oregon Agricultural College. In 1901 he was employed as a collector by the Nevada County Gas & Electric Company, which was later absorbed by the Pacific Gas & Electric Company. By 1911 he had risen to the position of assistant manager at Grass Valley and shortly after the company became part of the larger utility he was made manager of the Martinez office. In 1921 he was brought to the San Francisco office as assistant manager and in 1922 was made manager of electric sales.

May Abandon Saanich Peninsula Interurban Railroad

At a conference with the Victoria Chamber of Commerce and representatives of the surrounding municipalities, on July 16, A. T. Goward, vice-president of the British Columbia Electric Railway Company and manager of the company's business on Vancouver Island, stated that unless the heavy losses on the interurban line up Saanich Peninsula can be substantially reduced the line would have to be abandoned. The construction of the line cost the company $1,000,000, and by tearing it up and selling the rails and equipment $250,000 could be salvaged, Mr. Goward stated. The company is running behind $36,000 per year on this investment, owing to competition by motor buses and auto traffic.

The conference was called with the view of seeking some remedy, either by prohibiting the use of motor buses through the municipalities or by taxing them out of business, but the representatives present did not favor such a move, in fact, W. H. Dawes, secretary of the Sidney Board of Trade, suggested that the rails be pulled up and the right-of-way made into a first-class motor road.

The line in question is about 24 miles long, and runs from Victoria to the end of the Saanich Peninsula, passing within about a mile of Sidney. There appears to have been a lack of vision when the line was constructed in not running it into Sidney, which is a growing town with several industries. Mr. Goward admitted that if the line were diverted to Sidney it probably would improve its business, but he said there would be difficulty in raising money for the purpose at this time. The company makes its profits from the sales of gas and electricity, rather than from the operation of its extensive railway system.

Erection of Dam Forerunner of Development Project

As the result of the granting of a permit to erect a dam at Scott's Flat on Deer Creek in Nevada County, California, the Excelsior Water & Power Company there will erect a dam which will at first be 110 ft. high and about 1,000 ft. long. A reservoir of approximately 60,000 acre-feet capacity will be formed by the dam.

The first unit which will be used entirely for irrigation purposes will be completed in 1924 if present expectations are fulfilled. The company eventually intends to invest about twenty-seven million dollars in a program of irrigation and hydroelectric power development, according to W. G. Allen, general manager of the company. The development plans call for the irrigation of 110,000 acres and the generation of 127,000 hp. The initial dam will cost about five hundred thousand dollars.

Market Street, City Hall Plaza and the Civic Center group of buildings in San Francisco are to be brilliantly illuminated during the visit of President Harding. Plans for the work were recently given sanction by the committee in charge of illumination. Mayor Rolph has authorized Ralph W. Wiley, chief of the city department of electricity, to do the work and in addition to install a public address system so that persons outside of the Civic Auditorium may hear the address delivered by President Harding. The address will also be broadcasted.

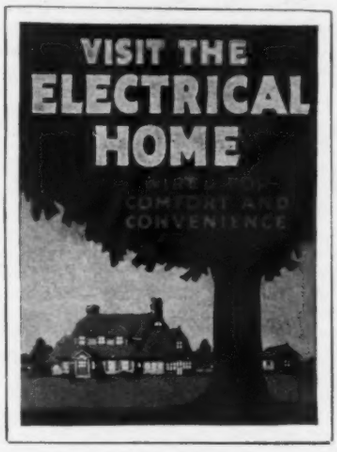
Development of Power in Idaho by Government Proposed

Congress will be asked to make an appropriation of $450,000 to erect a hydroelectric power plant at the foot of Arrowrock Dam to furnish electricity for a pumping plant in the Gem irrigation district in central Idaho. The plan is that of Congressman Addison T. Smith, who has been in Boise, Idaho, making a personal investigation of the Gem project. Mr. Smith has discussed with landowners his proposal to acquire power from the impounded water behind the big dam located 22 miles east of Boise.

There are 30,000 acres of land in the Gem project, of which 20,000 are under irrigation. Mr. Smith's plan is to make use of the lower outlets of the big dam, through which runs many times the amount of power that would be necessary to generate sufficient electricity to operate the plant. The Gem district was originally the Boise project, the largest government project in the United States at the present time. The lands were later excluded from the Boise project, and private capital was furnished to provide an irrigation system for them.

Poster Stamp Produced to Aid in Electric Home Exhibits

As a supplementary aid to the electric home committee in calling attention of the public to the electric home exhibit, the Society for Electrical Development has recently produced a four-color poster stamp. This stamp may be attached to any form of printed matter



Reproduction of new four-color poster stamp.

and on parcels. The design is particularly attractive and the vividness of the color should attract considerable attention.

The Society now has a complete assortment of material to assist the committees in charge of electric homes. The material consists of a monograph, "Organizing and Exhibiting the Electric Home"; a consumer booklet, "My Own Electric Home"; and a comprehensive advertising service made up of publicity items, metal arrow signs, poster stamps and lantern slides. Information concerning any of this material may be secured from the Staff Headquarters, 522 Fifth Avenue, New York, N. Y.

Denver Electrical League Drive for Funds Progressing

Reports from the Electrical Cooperative League of Denver, Colo., indicate that the start of its third fiscal year, July 1, is an auspicious one as evidenced by the subscriptions already obtained. With a budget increase of nearly $3,500 over the previous year, total pledges during the first two weeks in July amounted to $11,588.

All eight of the Denver jobbing houses were the first to meet their increased quota and were followed closely by the Denver Gas & Electric Light Company which raised its subscription to an amount approximating 50 per cent of the budget raised to date. Replies from manufacturers are being received promptly. There is some delay with the contractor-dealers, according to Clarence Keeler, chairman of the membership committee.

The central stations operating in territory adjacent to Denver have also subscribed to the campaign for the first time. They are the Arapahoe Light & Power Company of Littleton and Englewood and the Jefferson County Power & Light Company at Golden. W. C. Sterne, chairman of the Rocky Mountain Committee on Public Utility Information, is president and manager of the former while E. A. Phinney, prominent in the affairs of the Rocky Mountain division of the National Electric Light Association, directs the latter. The Mountain States Telephone & Telegraph Company has also renewed its pledge to the League.

A report of the past year's activities was submitted to the Advisory Board by S. W. Bishop, executive manager of the Denver organization, and will be used as the basis of the annual report to be printed shortly.

International Electragists Hold San Francisco Meeting

That the need for clear understanding of a uniform method of computing overhead and the uniform application of this overhead to a job are two of the greatest problems which are facing the electrical constructionist today was the message delivered by Laurence W. Davis, director of promotion and development of the Association of Electragists International at the San Francisco regional meeting of the organization July 23, 1923.

The meeting was one of a series which are being held throughout the country. In the West meetings were held at Denver, Los Angeles, San Francisco, Portland, Seattle and Vancouver. Accompanying Mr. Davis and participating with him in the program were James R. Strong, president of the association, and O. C. Small of the Society for Electrical Development, Inc., both of New York City.

The subject of Mr. Davis' address was "Estimating and Selling the Job." During the course of his talk he pointed out the use of the new manual of estimating which has been issued by the association and estimated a typical job. He described the strides which have been made in Milwaukee in raising the standards of electrical installations and in eliminating destructive competition since the adoption of the manual by the majority of contractors in that city.

One of the interesting exhibits which he presented to support his statements was a chart analyzing the business of a number of contractor-dealers whose annual business ranged from $13,000 to $100,000. The overhead in each case was analyzed to show that an average percentage could not be adopted by all contractor-dealers with any degree of safety.

Mr. Strong described the Eidlitz plan which has been adopted by the contractors of New York City and explained what has been done in that city to bring order into the contracting business. By adopting a uniform method of computing labor costs on a job, business has been put on a sound basis and the goodwill of architects, builders and general contractors has been secured. Under the plan, Charles Eidlitz, a retired contractor who had made a success of the business, has been made commissioner with a free reign to investigate costs and methods of doing business and to settle all disputes which arise between the contractor and his client. Charts of jobs which have been done since the adoption of the plan were presented to demonstrate its success.

The work of the Society for Electrical Development was described by Mr. Small, who pointed out the steps which are being taken by this organization to popularize the use of electric appliances and to aid the industry in selling them.

The afternoon meeting was followed by an informal banquet in the evening in honor of the visitors. A feature of the banquet was the description of the situation in the electrical industry in California given by various members of the industry. More than 50 attended the banquet.

The construction of the Mystic Lake plant of the Montana Power Company is progressing. The contract having been awarded to the Montana White Company, of Billings, for the transportation of more than two million pounds of material and machinery, presages that the power plant will be completed by the first of next February.

Idaho Power Company Is Seeking Higher Power Rates

An application for an increase in power rates has been made to the Idaho Public Utilities Commission by the Idaho Power Company. The company bases its claim on the valuation fixed by the Commission in 1919 together with additions that have been made up to Dec. 31, 1922. The company's valuation is in excess of seventeen million dollars.

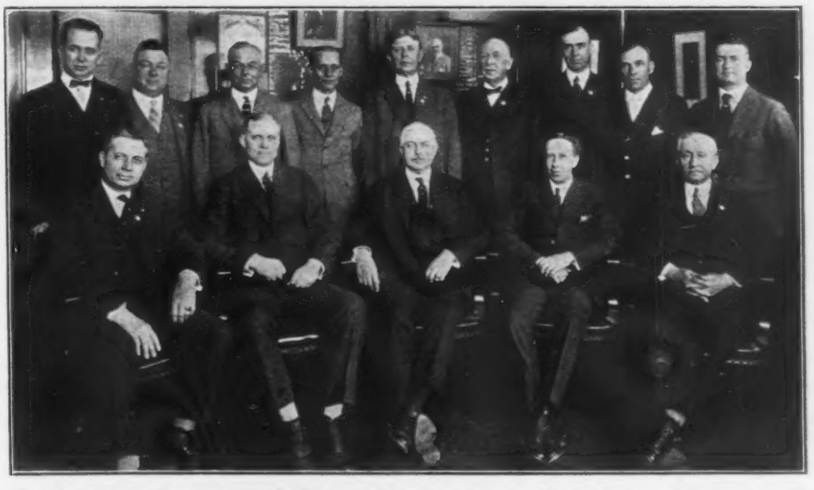
The Idaho commission has stated that public utility companies are entitled to a return of 8 per cent on capital investments in service and the company claims that an increase in rates is necessary to make this return. Any increase is being fought by the Idaho Power Users' Association.

The Idaho Power Company has filed a new set of rates which it wishes to become effective Oct. 1. The state commission has ruled that this tariff can not become effective until Oct. 20. Further hearings on the rate increase will be held Sept. 10. At that time the matter of bringing the company's valuation up to date will be considered.

Los Angeles Jobbers Open Office in San Francisco

Listenwalter & Gough, Inc., electrical supply jobbers of Los Angeles, have opened offices in San Francisco at 940 Mission Street. The move has been occasioned by the desire to better serve the territory for which the company acts as distributors.

The new offices are in charge of William H. Kaemper, who holds the position of district manager. Previous to joining the jobbing firm, Mr. Kaemper was connected with the Electric Lighting & Supply Company, electrical dealers of Los Angeles. Listenwalter & Gough, Inc., are distributors for the following lines: Royal vacuum cleaners, Estate ranges, American Beauty heating devices, Bryant, Benjamin, Trumbull, Union and Johns-Pratt wiring supplies and Rome wire.



Executives of the Denver Gas & Electric Light Company assembled in the office of Clare N. Stannard, vice-president and general manager. Reading from left to right the men are: (sitting) R. G. Gentry, commercial manager; V. L. Board, general superintendent; Clare N. Stannard, vice-president and general manager; Harry T. Hughes, treasurer; M. E. Malone, manager of coke department; (standing) Guy B. Hopkins, acting auditor; O. L. Mackell, office manager and chief clerk; C. F. Oehlmann, manager of steam heating department; George Wehrle, superintendent of gas department; George W. Bixler, publicity and advertising manager; F. A. Tewksbury, manager of safety and claims department; R. G. Munroe, assistant commercial manager; George McDermand, manager of tar and roofing department; and D. C. McClure, superintendent of electric department.

Transmission Line Being Built in Eastern Oregon

A mile and a half of high tension transmission line is now being constructed by a crew of the Eastern Oregon Light & Power Company, of Baker City, Ore. The line is to connect the present steam generating electric plant in South Baker with the entire transmission system, the connection to be made near the present Baker City substation, according to J. P. Lottridge, vice-president of the company.

Electricity generated at the steam plant will be stepped up from 2,300 volts to 23,000 volts by three transformers, and will be delivered into the transmission system at that voltage. The portion of the current used in Baker City will again be stepped down at the local substation. The cost of the work will exceed $6,000. A total of 79 poles will be used, there will be 370 insulators and over 3,700 lb. of copper wire will be strung.

Construction of this line is in preparation for the delivery of the added power which will be supplied when the large addition to the steam generating plant is completed.

Seattle League Fostering State Wide Public Ownership

Outlines of a program to secure state wide public ownership of hydroelectric power projects in Washington were recently presented at a meeting of the Public Ownership League of Seattle. Oliver T. Erickson, Seattle councilman and a profound supporter of public ownership, was named as president of the organization. Mr. Erickson has signified that he wants three women to fill the chairs of the vice-presidents of the organization.

The League is consistently working to force the public ownership of power companies upon the people of Washington. One or more delegates will be sent to the International Public Ownership Convention to be held in Toronto in September.

Mr. Erickson proposes that a bill similar to the California Water and Power Act be sponsored by the League at the next election so that sufficient funds can be secured by the state to enable it to enter into the production of power on a large scale.

National Representatives Speak Before Los Angeles Men

The largest and most spirited meeting ever conducted by the contractor-dealer branch of the electrical industry in southern California was held in Los Angeles, Friday evening, July 20, under the auspices of the Electrical Contractors and Dealers' Association of Los Angeles. Two hundred and fifty members of the electrical industry gathered at the Paulais Cafe for a banquet held in honor of James R. Strong, president, and Laurence W. Davis, director, department of promotion and development of the Association of Electragists International, and O. C. Small of the Society for Electrical Development.

This meeting was unique in that all arrangements were made by the Contractors and Dealers' Association of Los Angeles, and without the help of the various other branches of the industry, and also in view of the large number of contractors and dealers present. Of the total attendance at least sixty per cent were contractors and dealers. Besides 75 members of the local association there were about sixty members of the Electrical Safety Exchange of southern California present, these being from north Orange County, San Pedro, Long Beach, Glendale and Burbank.

Addresses were made by President Strong and Mr. Davis of the Association of Electragists International and by Mr. Small of the Society for Electrical Development. Mr. Strong gave a resumé of the work that the association has done and its plans for the future, and also stressed the importance of association work and stated that they should have more members on the Pacific Coast than they have. Mr. Davis delivered a very forceful address on some of the various work that is being done by the association for the benefit of its members and what it hopes to accomplish in the future. He explained in considerable detail the "Manual of Estimating" that has been perfected by the association and presented a chart with an actual problem worked out. Mr. Small spoke on the work that the Society for Electrical Development is doing in the merchandising field and how they are trying to assist in the increased sale of electrical appliances and devices. He also explained the workings of the organization and its reasons for existence. C. L. Breakman of Glendale spoke on the "Electrical Safety Exchange of Southern California—Its Organization and Membership." H. H. Walker, president of the Electrical Contractors and Dealers' Association of Los Angeles, presided as toastmaster.

Packard Electric Company Head Is Honored at Dinner

To celebrate the completion of twenty years of service with the Packard Electric Company, Warren, Ohio, twenty-four of the executives of the company and other business friends made N. A. Wolcott, president and general manager of the concern, the guest of honor at a surprise dinner held at an inn outside of Warren. During the evening a program consisting of speeches dealing with various impressions of Mr. Wolcott and musical and radio numbers was presented.

Mr. Wolcott joined the Packard Electric Company in 1903 and since then has been connected with the company which he now heads. His first position with the company was that of designing engineer and from this he was promoted to general manager. While serving in this capacity, Mr. Wolcott and R. E. Gorton bought out the Packard interests and Mr. Wolcott became president and general manager.

The Southern Idaho Land & Power Company, owning a large reservoir in Crane Creek, Washington County, Idaho, has applied to the Federal Power Commission for a preliminary permit for a proposed project which contemplates the diversion of flood waters from Little Weiser River into Crane Creek Reservoir and the construction of a power plant below the reservoir. The proposed plant would develop 20,000 hp. to be used in pumping for irrigation during the summer months.

Pacific Gas & Electric Company Dedicates New Building

The East Bay headquarters for the Pacific Gas & Electric Company at Clay and Seventeenth Streets in Oakland, Calif., was officially dedicated recently. At that time the late John A. Britton placed the copper box of relics behind the cornerstone of the building and put in the first trowelful of mortar that was to hold the cornerstone.

Following this ceremony, dedication ceremonies were held in the assembly hall of the building. Lee H. Newbert,

New building of the Pacific Gas & Electric Company in Oakland, Calif.

East Bay division manager of the company, presided at the meeting and introduced Mr. Britton, who spoke of the history of the public utility business in Oakland from the early seventies to the present time. Joseph Worthington, chairman of the Pacific Service Employees' Association and Wigginton E. Creed, president of the company, were the other speakers. Mr. Creed remarked concerning the industrial development of Oakland. Frank A. Leach, Jr., now vice-president and general manager, also made a short address.

The new building, which was erected at a cost of about $350,000, is one of eight stories with granite base and walls of flame colored terra cotta. A series of sunbursts over the arched opening in the eighth story gives the building a most attractive appearance at night. The main offices, where customers are cared for, are located on the first floor, and a display room for gas and electric appliances is maintained in the basement. Offices of the various departments are on the floors between the first and seventh.

The load dispatcher's department is located on the seventh floor. All the service lines in the northern part of the state are controlled from the load dispatcher's control board. Special telephone wires give the dispatcher ready communication with all generating plants.

To Present Window Displays in Thirty-nine Cities

Merchants of One Hundred and Thirty-six Northern California Cities to View Educational Lighting Exhibit

To present the better merchandising exhibit of the California Electrical Co-operative Campaign to the merchants of 136 cities and towns of northern California, the portable display of the Campaign will be driven 1,340 miles during the next three and one-half months. While on this trip 39 shows will be conducted in locations that are so situated that the merchants of 97 adjacent towns can be invited to attend the exhibition. The population of these 136 cities and towns is 471,633.

In the territory that will be covered by the tour, there are 142 newspapers with a total circulation of 277,000. In all cases where the portable window display has been presented newspaper publicity has averaged between 10 and 12 column inches per paper. If this same average is maintained during the coming tour, a total of between 1,420 and 1,704 column inches of free publicity will be secured by the electrical industry. All of these figures exclude the cities of San Francisco, Oakland, Alameda and Berkeley.

The tour has been occasioned by the success that has followed a partial tour of the cities in the southern part of the state. As direct results of the campaign that was presented there the following installations were made:

A department store in Los Angeles installed 700 reflectors in its show windows. Another department store in the same city installed 300 reflectors in its show windows.

In one Los Angeles building the stores installed 400 reflectors in their windows.

In another building in the same city 160 reflectors were installed.

Three stores in Riverside installed complete window lighting equipment.

In Pomona and Santa Ana three retail stores in each place ordered new lighting equipment.

In Santa Barbara new lighting outfits were placed in six retail stores.

Direct results in the San Francisco Bay region include the purchase by one San Francisco furniture store of several hundred reflectors and the installation of several hundred reflectors in a men's furnishing store in Oakland. These results were obtained from the initial displays made in both San Francisco and Oakland.

The window display was presented at the annual meeting of the retail furniture dealers of California early in the year and as a result the intensity of lighting in many small dealers' stores has increased appreciably, according to traveling men who have covered the state. At the quarterly meeting of the San Francisco Retailers' Association, held July 27 in San Francisco, the display was presented by Clarke Baker, National Lamp Works, Oakland, to about one thousand members of the sales staffs of the eight hundred member companies.

V. W. Hartley, assistant to the manager of the Campaign, will be directly in charge of the tour that is to start Aug. 3. From that date until Nov. 16, Mr. Hartley will present the display approximately every other night. The display will be held in a different city each night and traveling between towns will be done during the day.

Preparations for the exhibit are to be made by the district manager of the power company that serves the city. This man is to place the matter before the local chamber of commerce or retail dealers' association and will have one of these bodies send invitations to the retail dealers of the city and adjacent towns. In the larger places, local dealers will be asked to trim the window display, but where no suitable window trimmer is available, Mr. Hartley will do this himself.

The display that is to be used on the tour is in reproduction of a merchant's window and is approximately 12 ft. long, 12 ft. high and 6 ft. deep. The window is equipped with lighting units making possible the illustration of just what effect varying intensities of illumination have upon the merchandise on display, as well as the effects to be secured through the employment of colored lights, combination of colors, spotlighting, etc. A stock window-trim of merchandise is carried with the display, the entire exhibit being transported through the territory on an automobile truck.

A condensation of the itinerary is presented below. Names of cities and towns in which the display will be presented appear in capital letters and names of adjacent communities from which merchants will be invited are in lower case letters. Central station companies serving the cities are noted by figures in parantheses.*

Aug. 3—SAN RAFAEL; Sausalito, Mill Valley, San Anselmo; (5).
6—SANTA ROSA; Petaluma, Healdsburg, Sebastopol; (3), (5).
8—NAPA; Sonoma, St. Helena, Calistoga; (4).
10—VALLEJO; Benicia; (5), (9).
13—VACAVILLE; Suisun-Fairfield, Dixon, Winters; (3), (6), (8).
15—WOODLAND; Davis; (5).
17—ANTIOCH; Pittsburg, Byron, Brent-
20—WILLOWS; Orland; (5).
22—RED BLUFF; Gerber, Tehama; (5).
24—REDDING; (5).
27—CHICO; (5).
29—OROVILLE; Gridley; (5).
31—MARYSVILLE; (5).

Sept. 4—ROSEVILLE; Lincoln, Wheatland; (5).
6—AUBURN; Newcastle, Colfax; (5).
8—SACRAMENTO; (5).
12—LODI; Galt, Woodbridge, Lockford; (5), (10).
14—STOCKTON; Lathrop, Tracy.
17ANTIOCH; Pittsburg, Bryron, Brentwood, Concord, Walnut Creek; (3), (5).
19—OAKLAND, BERKELEY, ALAMEDA; to 27 Richmond; (3), (5), (10).

Oct. 1—SAN JOSE; Milpitas, Santa Clara, Sunnyvale; (5).
3—SANTA CRUZ; (1).
5—WATSONVILLE; (1).
8—SALINAS; Monterey, Pacific Grove; (2).
10—KING CITY; (1).
12—HOLLISTER; (1).
15—GILROY; (1).
17—REDWOOD CITY; San Mateo, Mountain View, Mayfield, Palo Alto, Menlo Park; (4).
18-21—Return to SAN FRANCISCO.
22—HAYWARD; (5).
24—LIVERMORE; (5).
26—MODESTO; Ripon, Ceres, Turlock; (5).
29—MERCED; Livingston; (6).

Nov. 2—FRESNO; Sanger, Selma, Fowler; (6).
5—DINUBA; Reedley; (7).
7—VISALIA; Hanford, Exeter; (7).
9—TULARE; Lindsay; (7).
12—PORTERVILLE; Delano; (7).
14—BAKERSFIELD; (6).
16—TAFT; Maricopa; (6).

*(1) Coast Counties Gas & Electric Company.
(2) Coast Valleys Gas & Electric Company.
(3) Great Western Power Company.
(4) Napa Valley Electric Company.
(5) Pacific Gas & Electric Company.
(6) San Joaquin Light & Power Corporation.
(7) Southern California Edison Company.
(8) Vacaville Water & Light Company.
(9) Valley Electric Light & Power Company.
(10) Western States Gas & Electric Company.

Books and Bulletins

A SYMBOL OF SAFETY

By HARRY CHASE BREARLEY. 290 pages, 83 illustrations, 6¼ x 9¼ in. Published by Doubleday, Page & Company, Garden City, N. Y.

A most comprehensive survey of the activities of Underwriters' Laboratories, Inc., this book deals with the organization of that institution and describes the need that is present for greater safety in every day life. The operation of the Laboratories in regard to tests that are made on almost every type of equipment used in commercial, industrial or home life is brought out in a most interesting manner.

The thousands of tests that are made in the Laboratories to determine the value of equipment subjected to these trials by engineers have done much to bring forward equipment which can be relied upon by the public. The tests are made, according to the book, in order to determine whether the device is of sufficient merit to warrant the granting of the Underwriters' label. In almost all cases throughout the text, in addition to describing the tests that are applied, the requirements that the devices must meet, are presented.

The volume covers tests varying from those performed on building materials to determine their conduct under strain, fire and water, to tests to provide for the granting of certificates of airworthiness of air craft. The attention of the Laboratories to electrical equipment is described at some length.

The book presents in an interesting and non-technical manner information concerning the technical tests made in the Laboratories and gives the reader a comprehensive idea of what is being done. Architects can secure from it valuable ideas as to what they should require in their specifications to secure absolute safety in buildings.

ABBEY'S REGISTER NORTHWEST LUMBER INDUSTRY

Published by The Industrial Service Company, Portland, Ore. 312 pages. 5½ x 7¾ in. Cloth $2.50, paper $1.85.

The book is the first complete directory of the Northwest lumber industry giving the names of 6,000 firms in California, Oregon, Washington, Idaho, Montana, Arizona, Nevada, British Columbia and Alaska. The firms are divided under the following classifications: saw mills, planing mills, shingle mills, logging operators, box shook manufacturers, furniture manufacturers, sash and door manufacturers, cooperage manufacturers, wholesalers, general stores, camp commissaries and veneer manufacturers.

The listing indicates what species of lumber is sawed, kind of head saw and the mill's capacity, whether equipped with edgers, trimmers, gang saw, resaw, dry-kiln, planing mill, shingle mill, lath mill, box shook machinery and also if company operates a logging camp. The names are classified alphabetically by states and cities. Mention is made of the shipping facilities the companies have.

Meetings

Convention of Electrical Clubs to Be Held in September

The second conference of electrical leagues and groups interested in forming local cooperative organizations has been called to meet at Association Island, N. Y., Sept. 16-19. The conference, which will be known as Camp Cooperation III, will be held under the auspices of The Society for Electrical Development.

The first conference of local electrical leagues was held last September. Those who attended felt that much good was accomplished and the feeling was quite general that the conference should be made an annual affair. Through an appropriation made by the executive committee of The Society for Electrical Development, the funds have been made available for this year's meeting and it is expected that a large and representative gathering will be on hand for Camp Cooperation III.

Invitations have been sent by the Society to electrical leagues and clubs and to others interested in local cooperative activities. Every activity has been made to reach all groups and individuals who should be included in a conference of this sort, in order that the discussions may bring out all viewpoints from all sections. Bulletins will be issued at frequent intervals from headquarters of the Society supplying all necessary information to those planning to attend.

Los Angeles Electric Club Will Hold Annual Outing

The first annual outing of the Electric Club of Los Angeles, Calif., is to be held Aug. 24 and 25. The outing will be in the form of a boat trip to San Diego. The program as outlined calls for the party to leave Los Angeles on Friday night on a special train that will take them to Wilmington where the party will board the steamship Ruth Alexander. The vessel will arrive at San Diego on Saturday morning and the party will spend the day ashore.

In the morning the visitors will amuse themselves and in the afternoon a program of races and sports has been arranged. A box dinner will be served on the lawn at Balboa Park in the evening. The return to Los Angeles will be started Saturday evening, the party arriving in the city at about 9:30 Sunday morning. The cost for the entire trip is $10.50.

Seattle Light Department Asks for Budget Increase

An increase of $568,691.67 in the 1924 budget of the Seattle municipal light department, which totals nearly $3,000,000, is asked in the estimate filed with the city council. The department asks $2,981,066 for next year, as compared with $2,412,375 for 1923. A large part of the increase in operating expenses is for additional employees to man the Skagit River hydroelectric plant which is scheduled for completion about January 1.

Another large item in the increase is for interest on bonds issued by the department. Interest of $864,741.67 must be paid on utility bonds next year, an increase of $95,466.67 over this year, and interest on general bonds of the department will cost $124,255, an increase of $4,800 over 1923. All of the expenses of the department are to be paid out of its earnings. The estimate calls for redemption of $215,000 of general bonds and $126,000 of utility bonds, redemptions exceeding those of 1923 by $126,000.

Driving of Tunnel to Pit No. 3 Power House Started

Driving of the 20,000-ft. tunnel of the Pacific Gas & Electric Company that is to carry water to Pit No. 3 Power House was started July 22. Work started on the eastern portal of the tunnel. When completed the tunnel will be part of the diversion system that leads water from Pit River to Pit No. 3 Power House.

Two separate tunnels are to be drilled out of the rock and the ends of these will be cemented together in order to deliver water to the power house at an effective head of 300 ft. Four working faces will be used by the crews driving the tunnels.

The dam that will form a lake in the bed of Pit River is to be located 4 miles up stream from the power house. There a dam 110 ft. high will be erected, which will back up the river for a distance of 9 miles. The lake thus formed will be about a mile and a half wide at its widest part.

COMING EVENTS

Convention of Electric Clubs—
Annual Convention—Association Island, N. Y.
Sept. 16-19, 1923

Rocky Mountain Division — National Electric Light Association—
Annual Convention—Glenwood Springs, Colo.
Sept. 17-19, 1923

Colorado Public Service Association—
Annual Convention—Glenwood Springs, Colo.
Sept. 17-19, 1923

American Institute of Electrical Engineers—
Pacific Coast Convention—Del Monte, Calif.
Oct. 2-5, 1923

As the result of the new city administration in Denver, Colo., the electrical inspection department is reported to have had a material change in personnel. This is due principally to the appointment of C. F. Oehlmer, formerly one of the deputy inspectors and who replaced his chief Charles F. Oliver upon the election of Mayor Stapleton. Joseph Staples, formerly a small contractor, has been appointed a deputy to replace George J. Nevin while Lester Hall succeeds C. E. Pillars and E. R. Meyer takes the place left vacant by Oehlmer. John Malpiede was the only other inspector carried over.

V. H. Reineking of Portland, Ore., engineer for the Bend (Ore.) Water, Light & Power Company, has started a survey of the proposed 5,000-hp. development on Tumalo Creek.

Seattle Electric Show and Home to Be Ready Aug. 25

Directed by W. E. Jones of the Economy Fuse Company, president of the Electric Club of Seattle, the various committees of that organization which is sponsoring the "Electric Show and Electric Home" to be presented in Seattle, Wash., from Aug. 25 to Sept. 8, are speeding up work on the campaign. The electric home under construction is nearing completion and will be ready for occupancy some time previous to the show. It will cost about $10,000.

The following appliance show committee has been appointed by President Jones, to function under the general management of W. H. Meacham, chairman of all committees: J. J. Agutter, J. J. Agutter Company, chairman; J. C. Hector, Fobes Supply Company; Arthur Williams, city lighting department; H. E. Boring, General Electric Company; Frank Lushington, Lushington Electric Company; Thomas R. Phelps, The Electric Shop; Frank Cooley, Western Electric Company.

Colorado Springs, Colo., is being urged as the convention city of the International Brotherhood of Electrical Workers as the result of a movement started by the local organization in that city and supported by the Chamber of Commerce. Letters have been sent to the 1,150 chapters throughout the country asking for support when the question is decided at the annual convention in Montreal, next week. The establishment of a national sanatorium at Colorado Springs by the International Brotherhood of Electrical Workers is also being considered.

Stating that San Francisco leads the world in street lighting, L. E. Voyer, assistant sales manager of the Edison Lamp Works San Francisco office, in an address to the Down Town Association recently, urged that the city should now take up the lighting of the highway leading down the San Francisco Peninsula. Mr. Voyer suggested that a system of high power highway lamps would greatly facilitate night traffic on the boulevards leading to San Jose and other cities to the south.

A large number of the electrical people of Salt Lake City, Utah, enjoyed an outing to Timpanogos Cave in American Fork Canyon on July 15. The outing was conducted by the Rocky Mountain Electrical Cooperative League, as the annual electrical outing, and proved to be a highly successful affair. It was decidedly different from the usual get-together parties, one of the main features being a long "hike" from the main canyon to the famous cave.

Before the tourist season opened in Colorado, the Electrical Cooperative League of Denver recommended to all communities maintaining auto camps the advisability of installing plenty of electric lights and where possible, facilities for electric cookery. As a result a number of improvements have been reported, the most recent being the installation of electric hot plates in the shelter house of the municipal auto tourist camp at Longmont, Colo., by Jay F. Brown, superintendent of electricity in that city.

Manufacturer, Dealer and Jobber Activities

The Westinghouse Electric & Manufacturing Company has issued the first number of a miniature publication entitled "Electric Heat." This publication, which will be published frequently, is devoted to industrial electric heating problems. In this issue there are articles concerning the use of electric heat in the manufacture of storage batteries, electric motors, and many other subjects. Of especial importance are articles by Prof. W. Trinks of the Carnegie Institute of Technology on "Advantages and Limitations of Electric Heat" and "Reduced Labor—A By-Product," by M. R. Armstrong.

The F. W. Wakefield Brass Company, Vermilion, Ohio, has recently announced that a new socket will be used in all "Red Spot" standard, ornamental and general-purpose hangers manufactured by the company. The socket was specially designed for the company by Pass & Seymour. The improvement, it is claimed, permits the hanger to be quickly wired without disassembling the socket from the hanger. The Wakefield company will issue a booklet describing the "Red Spot" line in the near future.

The Frank Adam Electric Company, St. Louis, Mo., has recently published Bulletin No. 29, which describes the Type P panel board manufactured by that company. The new board differs from others in that it is of sectional construction. Prices and descriptions of various size boards are given.

The Mutual Electric & Machine Company, Detroit, Mich., is placing on the market a new line of enclosed switches. The new switches will be known as "Junior" switches. The new switch will have punched parts and will be somewhat lighter in construction than the "Bull Dog" safety switches. The new switch will be cheaper than the "Bull Dog" line and is designed to meet conditions where service is not severe.

The General Electric Company has issued Bulletin No. 47,672, which describes control relays to be interposed between the circuit breaker solenoid and control switches. The relays described are known as the instantaneous control, type PB-53, and the hesitating control, type PB-54. The relays are used for the remote control of circuit breakers when it is undesirable to have the control current pass through the control switch.

The Edwin F. Guth Company, St. Louis, Mo., has placed on the market a new type fixture designed for kitchen use. The new fixture has a ceiling fitting and holder of white enameled steel and a spring holder is used to secure the glass in position. The fixture is supplied both with and without pull switch.

The National X-Ray Reflector Company, Chicago, Ill., has recently placed on the market three reflectors designed for use with 25 and 50-watt P-19 mill type lamps. One of the three is for factory use and the others are designed for window display illumination. The new reflectors are all smaller sizes of standard X-Ray reflectors.

Edward Miller & Company, Meriden, Conn., through their Duplex-A-Lite Department, have recently placed on the market two new trimmings for Duplex-A-Lite units.

The United Electric Company, Canton, Ohio, manufacturers of Ohio electric leaners, has recently prepared for its dealers a set of three folders which are designed for distribution to customers. The literature describes the Ohio cleaner and is well suited to the use for which it is intended.

The Wise-McClung Manufacturing Company, New Philadelphia, Ohio, has announced several changes in organization and executive sales personnel. The changes became effective June 1. W. J. Wise, president of the company, will personally direct the general sales policy of the company, as well as of the affiliated organization, Sunshine Sales Company. The general offices have been transferred from Cleveland to New Philadelphia, and all wholesale business will be transacted from the latter city. H. N. Woollatt will be in charge of the sales work in the field and will retain his title as assistant to the president. The Wise-McClung Manufacturing Company manufactures American and Sunshine vacuum cleaners. The company will maintain its retail branches in New York City, Brooklyn, Philadelphia, Cleveland, Columbus, Pittsburgh, Altoona, Erie and Johnstown.

W. Wesley Hicks, heating engineer and manufacturer of Wesix heating products, has recently taken over larger quarters in the Rialto Building, San Francisco. **Harry D. Mooney** and **A. Strauch,** electric heating engineers, have taken an office adjacent to those occupied by Mr. Hicks' organization.

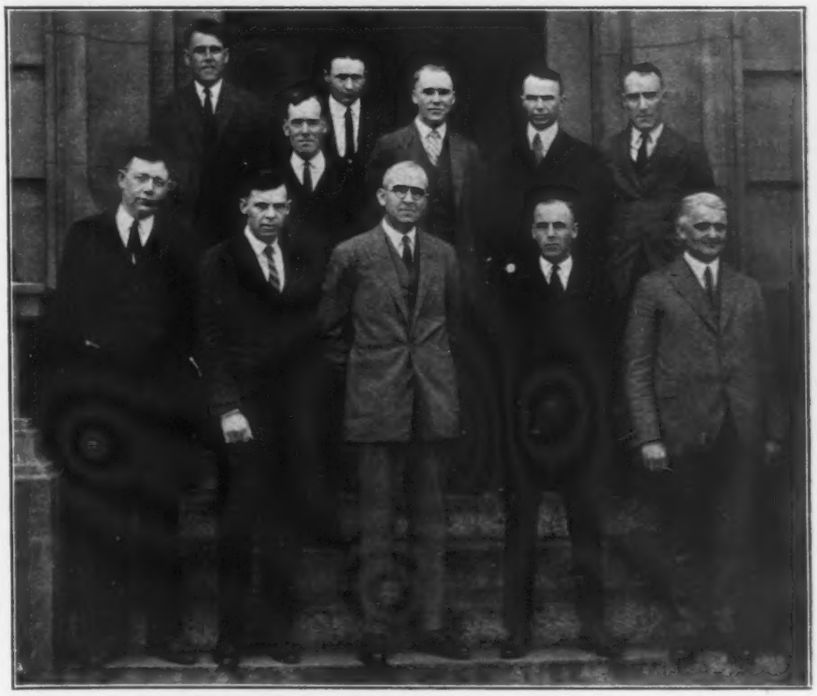
The Electric Appliance & Service Company is a new appliance, contracting and repair firm opened in Los Angeles, Calif., by D. K. McKinnon. The establishment is located at 5101 York Boulevard in the southern California city.

The Vaughn Electric Company, 4220 University Way, Seattle, Wash., has purchased the stock of the M & M Electric Company from the receivers of that firm. The company has also purchased the fixtures and shop equipment of the Sterling Electric Company of Tacoma. The Vaughn Electric Company will install a modern electric fixture and manufacturing establishment at 4240 University Way, where a large stock will be carried.

The Robbins & Myers Company, Springfield, Ohio, has recently gone into the production and marketing of its new Type L polyphase motors. These motors are made in a large range of sizes. The motors are said to have high power factors and improved starting torque. The method of ventilation is also a feature of design. Bulletin No. 135 contains details concerning the line of motors.

The Santa Fe Electric & Novelty Company has been organized in Santa Fe, N. M., by Mr. and Mrs. D. H. Atwater. The firm will install a stock of electrical appliances and fixtures. Mr. Atwater was formerly in the electrical business in Peoria, Ill.

The Trumbull Manufacturing Company. Plainville, Conn., has issued a supplement to Bulletin No. 4 describing its new motor-starting switches with overload relay and under-voltage release coil. The switch will be placed on the market about the middle of August.



It is said that in Spokane, Wash., everyone smiles and tries to look happy. Here is a group of men who have a real reason for looking happy, for it was largely due to their efforts that the Washington Water Power Company completed the sale of 431 electric ranges and water heaters in six weeks. The city salesmen who are grouped around Lewis A. Lewis, sales manager, and R. B. McElroy, manager of the Electric Store, reading from left to right are: (top row) W. A. Johnston; J. F. Farquhar, general agent; R. Magart; R. Moon; R. B. McElroy; J. R. Wiedeman; (bottom row) L. A. Kent; M. E. Collins; Lewis A. Lewis; A. E. Lacroix; E. R. Hunt.

Personals

W. M. Meacham, chairman of the executive committee of Seattle's electric home, is one of the best known electrical contractors in the Puget Sound district. He is also known in other lines of industrial activity, having engaged, since coming to Seattle in

W. M. MEACHAM

1905, in other work including general contracting and shipbuilding. Under the firm name of Meacham & Babcock, Mr. Meacham, the engineer of the company, constructed two large sub-aqueous tunnels in Seattle aside from other general contract work along this line. Meacham & Babcock also during the late war built, owned and operated the largest wooden shipyard in the Puget Sound district. This yard launched and delivered 12 ships to the Emergency Fleet Corporation. Mr. Meacham has been engaged in the electrical game nearly all of his life, starting in the industry in Chicago in 1889 with the Electric Construction Company. He attended the Chicago University, taking specialty work, after completing a course in the Lewis Institute. He is a native of the state of Kansas.

C. C. Hillis, vice-president and treasurer of the Electric Appliance Company, San Francisco jobbers, has recently returned from an extended visit throughout the East.

John P. Coghlan, former attorney for the claims department of the Pacific Gas & Electric Company, has been made assistant to the president.

Fred S. Myrtle, former manager of the publicity department of the Pacific Gas & Electric Company, has been made editor-in-chief of the company, a position formerly held by the late John A. Britton.

W. S. Berry, formerly sales manager of the Western Electric Company, San Francisco office, now manager, accompanied by Mrs. Berry, recently completed a business and pleasure trip throughout the Puget Sound district. A major portion of his time while away from San Francisco was spent in and around Seattle with Seattle executives of the Western Electric Company.

Phillip S. Biegler, professor of electrical engineering at the State College of Washington, Pullman, Wash., has severed his connection with that institution. At the end of July Professor Biegler will leave for Los Angeles, where he will become head of the department of electrical and mechanical engineering at the University of Southern California. He is a graduate of the University of Wisconsin and has been associated with the electrical engineering departments of Purdue University, the University of Montana and the University of Illinois.

G. N. Rankin, of the firm of Rankin & Esterbrook, contractors and dealers of Selma, Calif., has been appointed field representative for the California Electrical Cooperative Campaign for the San Joaquin Valley. Mr. Rankin is thoroughly familiar with the work of the Cooperative Campaign and is well versed in the practices of the electrical industry. His work in the valley will be among the architects, home builders and contractor-dealers. His headquarters will be at Fresno and he will cover the territory from Bakersfield to Stockton. He took over his new duties on July 15.

Elwood Bachman, of the Salt Lake City office of the General Electric Company, recently addressed a meeting of the All-Engineers Club of that city on the subject of electric welding.

Fred Garrison, who has been connected in the engineering department of the Southern California Edison Company for the past five months has just recently joined the engineering department of the General Electric Company in the Los Angeles office as assistant to E. E. Valk. Mr. Garrison completed his education at the University of Nebraska and rounded out his training at the General Electric Company's Schenectady works prior to his connection with the Southern California Edison Company.

A. W. Trimble, assistant manager of the Apex-Rotarex Department of the Illinois Electric Company of Los Angeles is on a visit to the Apex factory at Cleveland, where a convention of Apex representatives is being held.

J. R. Deering, office manager. Los Angeles office, Westinghouse Electric & Manufacturing Company recently visited San Francisco and other northern points in California.

James R. Strong, president of the Association of Electragists International, and **Laurence W. Davis,** director, department of promotion and development of the same organization, were Salt Lake City visitors on the evening of July 18. These gentlemen were scheduled to speak at a meeting of the electrical people at the Chamber of Commerce that evening, but due to delay in arriving, their time did not permit. An informal reception was held, however, at the Hotel Utah, at which many representatives of the various branches of the electrical industry were present.

Harry Byrne of the North Coast Electric Company has returned to Seattle from a trip to New York and other eastern centers.

Henry Whitehouse, of the Washington Electric Supply Company, Spokane, is one of the moving spirits in the Spokane Radio Association. He is organizing several concerts and entertainments each week for radio station KFZ.

F. J. Kiefer, associated for a number of years with the Pacific Fire Extinguisher Company in charge of construction and later with Luthy Company of Haywards as factory superintendent has been employed as field representative for the California Electrical Cooperative Campaign. Mr. Kiefer will cover the territory from Santa Maria northward along the coast. He will work with the contractor-dealer, the architect and builder. His headquarters will be in San Francisco.

R. H. Keays, noted engineer of Alaben, N. Y., has been elected chief engineer in charge of the construction of the Moffat tunnel in Colorado. Mr. Keays has just completed the supervision of the construction of the Shandaken tunnel for the water supply of the city of New York.

J. H. Hilficker, proprietor of the Eureka Electric Company, Eureka, Cal., is a recent San Francisco visitor. For the benefit of the electrical devotees of Isaac Walton, Mr. Hilficker reports the fishing to be extremely good in the neighborhood of Eureka.

R. E. Fisher, vice-president in charge of sales of the Pacific Gas & Electric Company, has been made vice-president in charge of public relations and sales. Mr. Fisher entered the employ of the company thirteen years ago in the power sales department. Previous to that time he had had a wide experience in the electrical industry, having been on the sales staffs of both the Pacific States Electric Company and the General Electric Company. He had also been engaged in the electrical contracting business. In 1920 he was promoted to the position of commercial manager of the company and became vice-president in charge of sales in 1922. For the past year he has been chairman of the Advisory Board of the California Electrical Cooperative Campaign and as such has been largely instrumental

R. E. FISHER

in the success of that organization during the past few months. As a director of the California Development Association he has injected the story of California's electrical progress into the message which that organization is spreading throughout the country. He has been an active figure in the affairs of the Pacific Coast Electrical Association, the National Electric Light Association, and is a member of the Joint Committee for Business Development.

John R. Freeman, engineer of Providence, R. I., and former president of the American Society of Civil Engineers, is a recent San Francisco visitor. Mr. Freeman has been retained in a consulting capacity regarding the water supply of the city of San Diego.

Howard C. Means, chief engineer for the Utah state road commission, has been chosen president of the Western Association of State Highway Officials, embracing eleven western states. **L. E. Laird,** superintendent of the Wyoming department, was selected as vice-president. **George W. Borden,** state highway engineer of Nevada, was named secretary. **Dr. L. I. Hewes** of the United States bureau of public roads, **William Weiser** of the advisory board to the Colorado road department, and **H. W. Gregory,** director of the Idaho road department, were selected as additional members of the executive committee.

Ben Holtz, of San Francisco, representing W. N. Matthews & Bros. Company, pole line hardware, recently completed his annual business trip throughout the Puget Sound territory, spending a major portion of his time in Seattle and immediate vicinity.

F. F. McCammon represented the electrical industry of Denver on the Board of Directors of the Colorado Pageant of Progress recently staged in that city. Mr. McCammon is in charge of the power sales department of the Denver Gas & Electric Light Company and is serving his third term as a member of the advisory board of the Denver Electrical Cooperative League. For several years after his graduation from Colorado College as an electrical engineer he was connected with the Westinghouse Air Brake Company. Several years before the war he entered the engineering department of the Denver central station, leaving the company in 1917 to enlist in the navy. He was

F. F. McCAMMON

commissioned an ensign and spent most of his time in the service along the Pacific coast, and as a consequence is widely acquainted with western electrical men. Upon his return from the service he engaged in power sales work for the Denver company, later being promoted to the position he now holds. He had the honor of being the youngest member serving on the Pageant board, which was made up of leaders in Denver civic and commercial circles.

Norman S. Gallison has resigned as associate editor of the Journal of Electricity to enter the employ of J. E. French Company, northern California motor car dealers. Mr. Gallison joined the editorial staff of the publication in 1920 following his graduation from the University of California. Subsequently he resigned to become connected with the department of statistics and research of the Twelfth District Federal Reserve Bank. He rejoined the editorial staff of the publication in September, 1921.

John W. Patterson has resigned his position as field engineer for the Western States Gas & Electric Company and moved to Los Angeles. He will engage in building construction work there for a large glass company, which is now carrying on an extensive building program.

H. Birchard Taylor, president of the Pelton Water Wheel Company of San Francisco and also vice-president of Wm. Cramp & Sons Ship & Engine Building Company of Philadelphia, has come to San Francisco for his annual inspection trip of the Pelton Water Wheel Company's plant. He is accompanied by **R. E. B. Sharp,** assistant chief engineer of the I. P. Morris Division of Wm. Cramp & Sons.

Ross Hartley, head of the electrical jobbing house of Los Angeles known as the Electric Corporation, has announced the opening during July of two branch houses in the Northwest, one in Portland and the other in Seattle. **Albert Rives,** formerly connected with the North Coast Electric Company, is the new Portland manager.

H. L. Melvin, electrical engineer, the Washington Water Power Company, Spokane, has been in the East for the past three weeks. Mr. Melvin attended the convention of the A.I.E.E. at Swampscott, Mass., and since then has been visiting electrical manufacturing plants in the East.

C. S. Walters, for 13 years manager of the Pacific Power & Light Company in Walla Walla, Wash., has resigned to become vice-president and general manager of the Ashville (S.C.) Light, Power & Street Railway Company. Mr. Walters will leave for Ashville in about 30 days.

Rodney J. Bardwell, counsel and one of the directors of the Denver Gas & Electric Light Company, has been appointed a member of the hospitality committee to meet and entertain General Pershing when he visits Denver Aug. 15 on his tour of inspection of the citizens' military training camps, one of which is located at Fort Logan, Colo.

D. C. McClure, president of the Rocky Mountain division of the N.E.L.A., presided at a luncheon at the Denver Athletic Club, July 20, the object of which was to determine definitely the activities to be followed by the organization this year and to arrange for the annual convention at Glenwood Springs, Sept. 17-19. Officers and committee and section chairmen were his guests. It was reported that the program of speakers had nearly been completed by the committee of which E. A. Phinney is the head and that the entertainment features for the entire convention had been completed by B. C. J. Wheatlake and his associates. Plans are being made for the accommodation of 150 guests.

Carl Heilbron, recently elected president of the San Diego County Electrical Contractors' Association, has been an active agent for the betterment of the industry in California for many years. Mr. Heilbron organized and became the general manager of the Southern Electric Company, of San Diego, in 1904. Three years later he assumed the position of president of his company as well as its managership. Mr. Heilbron has been a member of the State Electrical Contractors' Association and was active in its organization in 1907-8. His firm has also been a member of the national

CARL HEILBRON

association for 17 years. Locally Mr. Heilbron has been active in numerous civic affairs of the city, being at one time the president of the San Diego Chamber of Commerce, and vice-president of the Panama California Exposition in San Diego. He is a member of the San Diego Electric Club and of the San Diego County Electrical Dealers' Association, besides a number of civic bodies. Being a speaker of considerable talent, Mr. Heilbron has assumed the leadership of many San Diego civic undertakings and has been prominent in the movement for the rendering permanent of the Exposition buildings being preserved in the city of San Diego in its Balboa Park.

Dr. Joseph F. Merrill, dean of the school of mines and engineering at the University of Utah, was the principal speaker at the Salt Lake All-Engineers weekly luncheon at the Commercial Club on July 16. He gave a report on a recent conference of the American Society for the Promotion of Engineering Education at Cornell University, at which a committee was appointed to recommend a better curriculum for engineers, to include industrial management and other subjects.

Stephen I. Miller, dean of the College of Business Administration at the University of Washington, Seattle, has been chosen from a list of twenty distinguished college executives, for the position of National Educational Director of the American Institute of Banking, and will leave the University on Oct. 1 to assume his new duties. Mr. Miller's selection came after the Executive Council of the American Institute had canvassed the country for more than a year in search of the right man for the place. Mr. Miller was formerly executive manager of the Northwest Electrical Service League.

Trade Outlook

San Francisco

A slight falling off in purchasing by consumers has been noted in the last few weeks but jobbers in dry goods, hardware and other staple lines report business as being good. It is evident that retailers are limiting their purchases to small amounts that they are in need of for present use. Collections are slow.

Building in the San Francisco Bay region continues active and a sufficient supply of labor is at hand to care for the needs. Building materials are at about the same level with lumber showing a slight decline. Real estate operators report that a large number of transfers are being made and that the sales for the first six months of the year were 30 per cent over the corresponding period of last year.

Shipping both in and out of San Francisco Bay reached a new high level in June. During that month there were 567 arrivals and 578 departures. The vessels arriving represented a total of 1,196,233 tons while for those departing the total was 1,252,312 tons.

San Francisco bank clearings for the two-week period ended July 19, amounted to $334,500,000. For the same period in 1922 the total amounted to $295,600,000.

Los Angeles

Forty-eight new business and industrial concerns opened their doors for business in Los Angeles in June, according to the industrial department of the Chamber of Commerce, while in the month of May there were forty-six. Seven of the June industries are furniture and cabinet while only one will be engaged in the manufacture of electrical goods.

Building continues at an unabated pace as is evidenced by the permits that were issued for the first half of the month of July; the total number being 2,322 with an estimated valuation of $8,894,829.

Electrical manufacturers report exceedingly good business, and that they are able to obtain all that they can handle. This is particularly true of jobbers, especially as regards wiring devices and supplies. The sale of electrical appliances, both major household and the smaller ones, are very good, though this line of activity is not as good as the supply lines. With the advent of the present spell of warm weather the sale of electric fans is picking up. Radio sales are still going good and are considerably better than at this time last year.

Salt Lake City

A great deal of construction work is either under way, or about to begin, which means much to the progress and prosperity of Salt Lake City, the state of Utah, and in fact the entire intermountain section. Hundreds of men are now at work erecting the new plant of the Columbia Steel Corporation. The building of the Moffat Tunnel, which will bring another railroad across the mountains from Denver to Salt Lake, is assured. Hydroelectric development is being increased, to keep ahead of the growing demands of industry.

Recent announcement by the Utah Copper Company that it has awarded a contract for the erection of nearly one hundred modern brick houses on its property at Garfield, Magna and Bingham, Utah, at an estimated cost of $300,000, and also a large club-house at Bingham, would seem to indicate that that company has faith in the permanency of its operations in Utah.

Improved conditions are reported in the general retail business. Many new homes are being built, which is an important factor in the sale of electrical goods. Collections are reported as considerably improved. The general business situation is very favorable.

Portland

Preparations are being made at the freight terminals for handling the new fruit and grain crops, which will soon be pouring into the port for trans-shipment. Although some damage was done during July in certain areas by hail and rain, crops generally are in good condition and most of the principal commodities are well above the five-year average. Unfortunately for the farmer, the price of wheat is now very low, a fact which is expected to retard its movement. The fruit crop in the tributary country is unusually large with good prospects for profit. Foreign buying is already making itself felt.

The dry season has brought its worries for the lumberman. The logging camps are with difficulty keeping ahead of the mills and if fires should occur, these would be followed by a log shortage and higher prices. So far this season no serious fires have occurred.

Lumber mills are curtailing their output somewhat, as shown by the following figures for the week ended July 14: production was 2 per cent above normal, new business 11 per cent above production and shipments 6 per cent below new business.

The power companies report numerous sales of electric ranges.

Seattle

General business conditions throughout the Puget Sound district continue satisfactory. The demand for lumber has shown a slight slackening and the easing of lumber orders has given the mills of the state the first opportunity in months to build up stocks.

Construction has dropped off slightly, not in the number of permits, but in the work projected. Builders are inclined to hold back, in anticipation of price decreases, which conditions do not justify, according to local architects.

Early movement of empty freight cars westward from the eastern centers is depended upon to prevent serious car shortage in the Pacific Northwest this season, Department of Public Works officials state. At the October peak last season, an acute car shortage was experienced. With Washington in expectation of record crops for wheat and apples this year, the car problem becomes a serious one. Estimates on July 1 indicate that the Washington wheat crop will reach 59,382,000 bu., approximately 27,000,000 bu. more than in 1922, the report shows.

Electrical contractors and dealers report a very satisfactory volume of business during the month of July, taking into consideration that it is a vacation period. Collections are good.

Denver

New construction is decreasing, especially house and apartment building. Many extensive projects in these lines are under way but there are not the same number of new jobs being reported as was the case several months ago. For the first time since the war, a large number of apartments are available for rental while rents charged for private dwellings are being decreased in a number of cases.

Building material dealers feel that their goods are on a declining market while contractors and realtors say that the building peak has been passed. With hardly an appreciable increase in the cost of electrical work over that being done a year ago, it appears that competitive conditions between electrical contractors will become less severe and that better margins will be exacted on the work developing. Buying is extremely dull in nearly every line. This applies to electrical appliances especially.

Financial conditions throughout the region, however, seem to be sound. Recent statements of Denver banks showed a remarkably strong credit position with reserves ample to care for all the needs of the state during the crop moving season.

Spokane

Mining in the Coeur d'Alene district has been revived this spring, and most of the properties are under production. There has been increased activity in British Columbia.

The lumber industry is back to normal, with labor rather scarce. Three new plants have been added to Spokane's list of 20 woodworking establishments and two concerns have built large additions. With the large fruit crop in prospect, the manufacturers of boxes are working to capacity. The increase in house construction in the East is reflected in an increased demand for lumber and particularly for frames and sash, which are being shipped as far east as New York.

Bumper wheat crops are expected in the Palouse and Big Bend districts, but some concern is felt at the trend of the market. The apple crop of the Inland Empire promises to break all records. Plans for the construction of two oil refineries near Spokane have been announced by two companies. It is the intention to refine crude oil produced in the northern fields of Montana.

WASHING MACHINE DIRECTORY

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A list of washing machine manufacturers giving catalog information on the equipment of each, with complete list of Western Distributing Agencies where repair parts may be secured. The publisher does not guarantee this information, but to the best of our knowledge it is correct at date of publication. When referring to this list in any way, mention the **Journal of Electricity.**

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O—oscillating type
VC—vacuum cup type
Cl—cylinder type
D—dolly type
Im—impeller type
DFM—Dayton Fan & Motor Co.
Wx—Westinghouse
GE—General Electric
RM—Robbins & Myers
Em—Emerson
Dom—Domestic
Cen—Century
L—Lovell
W—wood
M—metal
Sw—swinging
St—stationary
An—Anchor
Am—American
C—copper
TC—tinned copper
Cz—copper, zinc lined
GI—galvanized iron
Z—zinc
VM—various models

Manufacturer	Trade Name	Operation	Motor		Wringer		Tub			Retail Price		Western Sales Representative	Western Distributor	Nearest Point At Which Repair Parts May Be Obtained
			Horse Power	Maker	Type	Length in Inches	Dimensions	Capacity (Sheets)	Material	Eastern	West of Rockies			
Almetal Mfg. Co., St. Louis, Mo.	"Almetal" "Pollyanna"	VC O	1/4 1/4	GE GE	W W	11 11	19x18 26x17	6 7	C C	$135 $120	$145 $130	.....	**W. C. Bailess,** 531 W. 8th St., Los Angeles	Distributor.
Altorfer Bros. Co., Peoria, Ill.	"A. B. C."	Cl O	1/4	RM	M or W	10	22x24	6	W or Z	$135	$145	**W. E. Peters,** 89 E. 12th St., Portland	**A. A. Wilson,** 612 S. Spring St., Los Angeles	Distributor
Apex Appliance Co., 3223 W. 30th St., Chicago, Ill.	"Apex"	O O	1/6 1/4	GE RM Wx Wx	M M	11 12	....	6-9 16	TC TC	....	....	**A. M. Smith Co.**, Los Angeles	Dealers	Dealers
Anex Elec. Mfg. Co., The 1067 E. 152nd St., Cleveland, Ohio	"Rotarex"	Cl	1/4	Own	M	12	17x18	8	G C	$152.50 $167.50	$157.50 $172.50	**G. A. Buckley,** 1405 Walnut St., Kansas City, Mo.	**The Apex Elecl. Distrib. Co.,** 681 Market St., San Francisco 1437 Welton St., Denver 2011 Broadway, Oakland 1024-11th St., Sacramento 2117 Inyo St., Fresno **North Coast Electric Co.,** Portland, Seattle, Tacoma, Spokane	Distributors
Automatic Elec. Washer Co., Newton, Iowa	"Automatic"	D	1/4	Wx Em	W	12	.....	6	C	$107	$117	**Inter Mountain Elect. Co.,** Salt Lake City and Direct Salesmen	**Domestic Elec. Appl. Co.,** Seattle **Inter Mountain Elec. Co.,** Salt Lake City and Direct Salesmen	Salt Lake City
Barlow & Seelig Mfg. Co., Ripon, Wis.	"Big 3"	VC	1/6 and 1/4	Em	W	11 and 12	.....	4 to 8	C	VM $90 to $150	VM $100 to $165	**Dohrman Commercial Co.,** San Francisco	**Dohrman Commercial Co.,** San Francisco	Distributor
Buckeye Prima Co., The Sidney, Ohio	"Prima"	O	1/4	GE	M	12	.....	8	W	$160	.....	**H. R. Christy,** 322 Leary Bldg., Seattle	**H. R. Christy,** 322 Leary Bldg., Seattle	Distributor
Chicago Dryer Co., 2210-20 N. Crawford Ave., Chicago, Ill.	"Chicago"	O	1/4	Em	M	12 and 14	26x18 26x21 26x24	9 12 15	Cz	$200 to $375 VM	.....	.....	**M. E. Hammond,** Pacific Bldg., San Francisco **S. W. R. Daily,** Seattle **Maritzen-Kuns Co.,** Los Angeles	Distributors
Clarinda Mfg. Co., Clarinda, Iowa	"Clarinda"	D	1/4	GE	W	10	22x22	6	W	$80	$90	**Thos. T. Hoffmire,** 178 W. 41st Place, Los Angeles		
Clark Cadle Harmon Corp., Rochester, N. Y.	"Harmony"	Cl	1/4	Wx	L	11	18½x19	8	W	.....	.....	**Rawling & Smith** 604 Mission St., San Francisco	**Dunham, Carrigan & Hayden Co.,** San Francisco	San Francisco
Coffield Washer Co., The Dayton, Ohio	"Coffield"	O	1/4	Sp	Sw	12	22x22	8	TC	$155	$160	**E. P. Becker,** 111 E. 3rd St., Los Angeles	**Woodill-Hulse Elec. Co.,** 111 E. 3rd St., Los Angeles **Honeyman Hardware,** Portland **Northwest Washer Co.,** Seattle	Distributors
Conlon Corporation, 52nd Ave. and 19th St., Chicago, Ill.	"Incomparable Conlon"	Cl	1/4	GE	M	12	23x22	6	C GI	$180 $170	.....	**Woodill-Hulse Elec. Co.,** Los Angeles		Distributor
Davis Sewing Mch. Co., The Dayton, Ohio	"Blue Bird"	O	1/6	GE Wx	Sw	11	16½x27	8	C	$160	$160	**C. A. Eastman,** 7303 Seward Park Ave., Seattle	**Blue Bird Appliance Co.,** 1007-1st Ave., Seattle **Alexander & Lavenson,** San Francisco	San Francisco
Dawn Mfg. Co., The Bridgeport, Conn.	"Dawn"	VC	1/6	GE	Am	12	.....	6	...	.....	$79	**Frederic A. Clarke** 351 Oak St., Glendale, Cal.		3336 S. Broadway, Los Angeles
Delco-Light Company, Dayton, Ohio	"Delco-Light"	O	1/6	DL	M	11	22x22	8	C	.....	$145	.....	**W. L. Cochran, Inc.,** 880 Mission St., San Francisco **Ivan L. de Jongh,** 129 E. 6th St., Los Angeles **Modern Appliance Co.,** 508-1st Ave., South, Seattle	Distributors
Federal Electric Co., 8700 S. State St., Chicago, Ill.	"Federal"	O	1/4	Wx	L	....	32x27	6	C GI	$175	$175	**Federal Electric Co.,** 91 New Montgomery St., San Francisco	Jobbers	Jobbing Points
Foote-Burt Co., The Cleveland, Ohio	"Acrobell"	VC	1/4	GE RM	M	....	18½x24	8	C	$165	$175	.....	**Commercial Associates,** Los Angeles **Barker Bros.,** Los Angeles	Los Angeles
Fosston Mfg. Co., St. Paul, Minn.	"Pal-O-Mine" "New Liberty"	O Cl	1/6 1/4	Wx Wx	St Sw	....	....	6 8	C W	$125 $145	....	**Pryser & Herman,** 815 Union League Bldg., Los Angeles	**Western Agencies, Inc.,** San Francisco	San Francisco
General Railway Signal Co., Rochester, N. Y.	"G-R-S"	Cl	1/4	Own	Sw	12	.....	8 to 18	C GI	$140 to $210	.....	.....	**Mangrum & Otter Inc.,** 827 Mission St., San Francisco	Rochester, N. Y.
Getz Power Washer Co., Morton, Ill.	"American Beauty"	O	1/4	Wx	M	11	.....	6 8	C C	$125 $155	$135 $165	**Getz Washer Sales Co.,** 910 S. Grand Ave., Los Angeles	.....	Los Angeles
Geyser Electric Co., 5008 Bloomingdale Ave., Chicago, Ill.	"Geyser"	Cl	1/4	Em Dom	L	11	.....	3 to 9	C GI	$75 to $175	$85 to $185	**Ion Arnold,** Westminster Hotel, Los Angeles	.....	Chicago, Ill.

NOTE—In compiling this series of Directories, the Journal of Electricity has made an effort to secure the desired information from all manufacturers of the types of equipment listed that is sold in the West. The Publisher will be glad to receive omissions, changes and additions for publication in the big FALL BUYING NUMBER of October 15, 1923.

WASHING MACHINE DIRECTORY

(CONTINUED)

Key to Abbreviations

O—oscillating type
VC—vacuum cup type
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Im—impeller type
DFM—Dayton Fan & Motor Co.
Wx—Westinghouse
GE—General Electric
RM—Robbins & Myers
Em—Emerson
Dom—Domestic
Cen—Century
L—Lovell
W—wood
M—metal
Sw—swinging
St—stationary
An—Anchor
Am—American
C—copper
TC—tinned copper
Cz—copper, zinc lined
GI—galvanized iron
Z—zinc
VM—various models

Manufacturer	Trade Name	Operation	Motor		Wringer		Tub			Retail Price		Western Sales Representative	Western Distributor	Nearest Point At Which Repair Parts May Be Obtained.
			Horse Power	Maker	Type	Length in Inches	Dimensions	Capacity (Sheets)	Material	Eastern	West of Rockies			
Haag Bros. Co., Peoria, Ill.	"Haag"	D Cl O	1/4	GE RM Em	W	12	.....	6	W	$86 to $145	.....	**F. H. McGinnis,** 906 "J" St., Sacramento	**F. H. McGinnis,** Sacramento, Cal. **A. N. Smith Co.,** Los Angeles	Sacramento, Cal.
Horton Mfg. Co., Fort Wayne, Ind.	"Horton"	VC D	1/4 1/6	GE GE	M	12	18x25	8	C	$160	.....		**Baker Hamilton & Pacific Co.,** San Francisco **A. A. Wilson,** Los Angeles **Schwabacher Hdwe Co.,** Seattle **Hexter & Co.,** Portland **Salt Lake Hdwe Co.,** Salt Lake City **Holly Mason Hdwe Co.,** Spokane **Tritch Hardware Co.,** Denver	
Hurley Machine Co., 22nd St. & 54th Ave., Chicago, Ill.	"Hurley Thor"	CL	1/6 1/4	GE Wx	M	11 12	.....	6 to 12	C or GI or W	$125 to $275	$135 to $280	**Hurley Machine Co. J. W. Ferry,** 425 Rialto Bldg., San Francisco	**Pacific States Electric Co.,** San Francisco, Los Angeles, Oakland, Portland, Seattle, and Spokane	All branches of distributor
	"Hurley Superior"	O D	1/6 1/4	GE Wx	M or W	11 12	.....	6	C or GI or W	$84 to $145	$145 to $155			
Johnson Elec. Washer Co., 40th & Adeline Sts., Oakland, Cal.	"Johnson" "Common Sense"	Im VC	1/4 1/6	Wx Wx	Sw Sw	11 11	16x22 12½x22	6 6	C C	.....	$100 to $140	**Johnson Elec. Washer Co.,** 40th & Adeline Sts., Oakland, Cal.	Same	Factory
Landers Frary & Clark, New Britain, Conn.	"Universal"	Cl	1/4	RM Wx	W	12	.....	6	GI C	.....	$150 $165	**C. K. E. Watson** Call Bldg., San Francisco	**Electric Appliance Co.,** San Francisco, Los Angeles **Baker Hamilton & Pacific Co.,** San Francisco	San Francisco and Los Angeles
Maytag Co., The Newton, Iowa	"Maytag"	Cl	1/4	GE	Sw	12	22x22	6	A	$150	$160	**Chas. H. Long,** 315 Belmont, Portland	**Schlueter's,** Los Angeles, San Francisco **Holly-Mason Hdwe Co.,** Spokane **The Salt Lake Hdwe Co.,** Salt Lake City **Sloat Wholesale Co.,** Portland **Southern Electrical Co.,** San Diego **Stewart Wholesale Co.,** Boise, Idaho **West Coast Sales Co.,** Oakland	Representative or Distributors
Meadows Mfg. Co., Bloomington, Ill.	"Meadow Lark"	Cl	1/4	.....	M	11	18x20	6	GI C	$135 $155	$145 $165	**L. A. Robinson,** 854 S. Hill St., Los Angeles	**Manufacturers Representatives Co.,** 74 New Montgomery St., San Francisco	San Francisco
	"Greyhound"	O	1/4	.....	M	11	18x28	8	C	$150	$160			
Michigan Washing Mch. Co., Muskegon, Mich.	"Michigan Electric"	D	1/4	GE	W	10	.....	6	W	$85	$85	.....	**Heyman Weil Co.,** San Francisco **Union Hdwe. & Metal Co.,** Los Angeles	San Francisco and Los Angeles
	"Electric Lady"	O	1/4	GE	W	12	.....	12	C	$150	$150			
Modern Laundry Mch. Co., Kansas City, Mo.	"Mola"	Cl	1/4	.....	W	12	.....	.....	.....	$130	$135	**Geo. E. Prine,** care of A. A. Wilson, 606 S. Spring St., Los Angeles	**A. A. Wilson,** 606 S. Spring St., Los Angeles	Los Angeles
New Era Elec. Corp., Hoboken Terminal "D," Hoboken, N. J.	"Modern Home Washer"	Cl	1/8	GE	An	12	19½x19½	6	GI	$119	$127.50	**H. R. Basford Co.,** San Francisco	.....	San Francisco
One Minute Mfg. Co., Newton, Iowa	"One Minute"	Cl	1/3	Dom	Sw	12	.....	6	C	$145	$152	**A. J. Ratelle,** 619 Pine St., Seattle	**Dohrman Commercial Co.,** **Parmelee-Dohrman Co.,** Los Angeles	San Francisco
		D	1/4	Dom	Sw	12		6	W	$99	$106.50			
Puffer-Hubbard Mfg. Co., 2601–32nd Ave., S., Minneapolis, Minn.	"Daylight"	VC	....	Em	W M	12 12	.....	.....	C W	$155	$165	**Puffer-Hubbard Mfg. Co.,** 207 Railway Exchange, Portland	.....	.....
Sunbeam Elec. Mfg. Co., Evansville, Ind.	"Sunbeam"	O	1/6	Wx	M	12	19x23	8 6 18	C	$155 $129.50 $215	$162.50	**F. M. Hills,** 516 Bancroft Blvd., San Diego	.....	San Francisco
Sunny Line Appliances, Inc., 4058 Beaufait Ave., Detroit, Mich.	"Sunnysuds"	O	1/4	Dom	M	12	.....	.....	C	$125	$135	.....	**Commercial Associates, Inc.,** 754 N. Spring St., Los Angeles **Poole Elec. Co.,** 1206–4th Ave., Seattle	
Syracuse Washing Mch. Corp., Syracuse, N. Y.	"Easy Vacuum Elec. Washer"	VC	1/6	GE RM	M	12	.....	8	C GI	$155	$165	**J. Lee Richards, Syracuse Washing Mch. Sales Co.,** 180 New Montgomery St., San Francisco	.....	San Francisco
The "1900" Washer Co., Binghamton, N. Y.	"Cataraction"	O	1/4	RM	Sw	....	.....	8	....	$155	$165	**W. Lee Holmes,** 71 New Montgomery St., San Francisco	.....	.....
Western Electric Co., New York City	"Western Electric"	Cl	1/6	Own	Sw	11¾	22x23	6	GI TC	$145 $165	$155 $175	**Western Electric Co.,** San Francisco, Los Angeles, Oakland, Seattle, Tacoma, Portland, Spokane, Denver, Salt Lake City	**Western Electric Co.,** San Francisco, Los Angeles, Oakland, Seattle, Tacoma, Portland, Spokane, Denver, Salt Lake City	All Branch Offices
White Lily Mfg. Co., Davenport, Iowa	"White Lily DeLuxe"	Cl	1/4	GE	.....	.....	.....	6	GI C	.....	.....	**H. J. Valentine,** 488 N. Cypress, Burbank, Cal.	.....	Factory
H. E. Williamson Co., 22 Grace St., San Francisco	"California Maid"	Cl	1/6	Cen	Sw	11	18x26	8	GI	.....	$125	**H. E. Williamson Co.,** San Francisco	.....	San Francisco
Woodrow Mfg. Co., Newton, Iowa	"Woodrow"	D	1/6	Em	Sw	12	.....	6	W	$102	$110	.....	**W. E. Dooley & Co.,** 804 Pine St., Seattle **A. A. Wilson,** 712 S. Spring St., Los Angeles	Distributors